An investigation of the psychometric properties of mood disorder self-report measures used with older adults with a medical illness

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Declaration

This thesis has been composed by myself and the work contained herein is my own

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Abstract

Objective

The growing proportion of older adults in the population and the recognition that this age group is often underserved by health services (Unutzer et al, 1999) has recently led to an increased interest in the study of mental health of older adults. Initial investigations suggest that anxiety is one of the most prevalent psychiatric conditions affecting older adults (Blazer, 1997). Assessing anxiety in older adults is difficult as it may present differently than it does in younger adults (Himmelfarb & Murrel, 1983) and often presents co-morbidly with medical illness and/or other psychiatric conditions (Stanley & Beck, 2000). Many of the existing standardised measures of anxiety have been developed with younger populations and their applicability to older adults is questionable (Blazer, 1997). The primary aim of this study is to investigate the psychometric utility of anxiety self-report measures in older adults who have a co-existing medical illness.

Method

Older adults who had recently undergone cardiac artery bypass graft surgery were invited to participate. The Mini-Mental State Examination was administered to participants to ensure that they were able to give informed consent and demographic information was collected. A semi-structured interview (SCID-IV) was conducted,

leading to a clinician-rated diagnosis of anxiety. The participant was also asked to complete five self-report anxiety and depression measures (Beck Anxiety Inventory; Penn State Worry Questionnaire; Short Anxiety Screening Test; Hospital Anxiety and Depression Scale; Geriatric Depression Scale). The self-report questionnaires were subsequently re-administered after a two-week interval.

Results

Seventeen older adults (mean age 69.5 years) agreed to participate. The results must be interpreted with caution due to the small number of participants. The majority of the anxiety self-report measures failed to demonstrated sensitivity for this population of medically compromised older adults (with the exception of the SAST). Most were found to demonstrate specificity between anxiety and depression (with the exception of the HADS anxiety scale). None of the scales demonstrated test-retest reliability.

Conclusion

The SAST shows promise as a self-report questionnaire that can be utilised to accurately assess anxiety disorders in medically compromised older adults. The BAI, PSWQ and HADS would not be recommended for use with this population on the basis of results found in this study. Further research is needed to assess the utility of self-report anxiety measures for older adults with medical difficulties. Accurate assessment and evaluation of anxiety in older adults will provide a sold foundation upon which to base future research and intervention (Stanley & Beck, 2000).

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Introduction

"The remarkable growth of the older population world-wide poses both opportunities and challenges... The need to understand the factors that promote health and independence and those that lead to disease and disability has never been more urgent" National Institute of Aging, 2001

General overview of thesis

The growing proportion of older adults in the population and the recognition that this age group is often underserved by health services (Unutzer, Katon, Sullivan & Miranda, 1999) has recently led to an increased interest in the study of mental health of older adults. In order to provide older adults with the best possible care within a health care system with limited resources, there is a need for accurate information on psychiatric disorders within this age group (Power, Thomson & Gallagher-Thomson, 2000). Initial investigations suggest that anxiety is one of the most prevalent psychiatric conditions affecting older adult (Blazer, 1997; Stanley & Beck, 2000). However, despite relatively high estimates of prevalence, very little is known about the experience, presentation and assessment of anxiety in later life (Kogan, Edelstein

& McKee, 2000). Two major problems facing researchers on anxiety disorders in later life are the lack of assessment measures that have been developed and/or psychometrically validated with older people, which take into account the specific presentation issues found with older adults (Fuentes & Cox, 2000; Himmelfarb & Murrell, 1983; Kabacoff, Segal, Hersen & Van Hasselt, 1997; Stanley, Beck & Zebb, 1996) and the related issue of complexities in obtaining accurate prevalence rates (Blazer, 1997). In general the use of currently available self-report anxiety measures when assessing anxiety in older adults is considered imprudent (Kogan et al, 2000). Most are designed for younger populations and clinicians risk an invalid assessment and diagnosis when using measures for which the psychometric properties are still in question for older adults. One particular complexity relevant to older adults is the fact that older adults often present with a medical illness in addition to any other difficulty (Kogan et al, 2000). Although there are many pertinent questions that remain to be answered concerning anxiety in later life the primary aim of this study is to investigate the utility of self-report measures in older adults who have a co-existing medical difficulty.

The introduction to this thesis will discuss the current and projected demography concerning the number of older adults world wide and place these statistics in the context of the likely impact that an ageing population will have on health services in general, and on psychological services in particular. Prevalence rates for anxiety in older adults and the inherent difficulties in obtaining reliable estimates of prevalence will then be discussed. The assessment issues mentioned above will be examined in detail, with a review of the current literature on assessment of anxiety (with a

particular focus on self report-measures). Finally, the aims and objectives of the current study will be detailed.

To clarify terminology, unless otherwise specified, the terms 'older people' or 'older adults' will be used interchangeably and refer to women and men aged 60 and over. Although this definition is flawed (e.g. with reference to differences between the developing and the developed world and to individual differences within a given population, chronological age is not always the best indicator of the changes that accompany ageing; Knight & Satre, 1999; Thomson, 1996) it is the definition currently employed by all United Nations demographic projections (Edwards, 2001, pg 4). The term 'oldest old' will refer to people aged over 80 years. Again, this definition concurs with the United Nations documentation.

The word *anxiety* is used in everyday language to describe a normal human emotion associated with a subjective sense of apprehension or nervousness about a future event (Sheik,1992). However, in this discussion, *anxiety* will be used to signify pathological or clinically significant anxiety as discussed in the Diagnostic and Statistics Manual IV (DSM-IV) (American Psychiatric Association, 1994, 2000).

Section One: Projected demography and impact on health services

An ageing population

As fertility rates decline and adult mortality rates improve the world population is steadily ageing (Kinsella & Velkoff, 2001). There are currently 580 million people

aged 60 and over in the world and current research indicates that this figure is expected to rise to over 1 billion within the next 20 years (Kinsella & Velkoff, 2001). Within the United Kingdom, previous and projected demography clearly indicates that the population is growing older and living longer. It is estimated that approximately 20 percent of the UK population will be over pensionable age within the next 10 years. Within Scotland, 787, 000 (15 percent) of the population is currently aged over 65 years and this is expected to increase to 1.2 million over 65's by the year 2031. Within this time frame, it is thought that the number of people aged over 85 years in Scotland, the 'oldest old', will almost double (from 84,000 to 150,000) (Wood & Bain, 2001).

Health and well-being of the ageing population

Traditionally, old age has been associated with views of sickness, dependence and a lack of productivity (WHO, 2001). However, such out-dated views do not reflect reality and most people adapt to change with age and remain independent well into very old age, often making important contributions both within their family and to society in general. In Scotland, the vast majority of older people (95 per cent) continue to live at home and the majority of them are in 'good health' (only 20 per cent require assistance to live at home and the majority of them are the 'oldest old') (Kinsella & Velkoff, 2001; Scottish Executive, 2002). Recent figures suggest that the majority of older people cope well with the physical limitations, cognitive changes and the various losses (e.g. bereavement, retirement) that are commonly associated with later life (Wood & Bain, 2001).

Nonetheless, it is also the case that, in general terms, older people are the group most likely to have higher dependency and more complex needs (in particular the 'oldest old') and, as a result, they make considerable use of their general practitioner and other National Health services (Scottish Executive, 2002; Wood & Bain, 2001). Additionally, although evidence of 'coping' is suggested by statistics that indicate that the majority of older adults live independently, it is likely that their quality of life would be improved with greater awareness of any psychological distress. At present, the 15 percent of the Scottish population now over aged 65 accounts for around 40 percent of health and social care spending (Wood & Bain, 2001).

Meeting the psychological needs of an ageing population

The ageing population will lead to an increased demand for clinical psychologists and other health care professionals who have an understanding of the ageing process and its relationship with mental and physical health difficulties, co-morbidity and cognitive assessment. As life expectancy increases, there is an ever greater need to keep these additional years free of disease and disability. The World Health Organisation has taken a positive lead in this area and, at present, co-ordinates ongoing research studies and initiatives aimed at finding out more about the process of 'active ageing' (Edwards, 2001). It is hoped that an understanding of the issues and factors involved in 'healthy ageing' will positively influence the care and advice given to older adults and to those approaching older age. A greater understanding of the presentation and experience of traditional mental health difficulties such as anxiety and depression in older adults is needed, especially with regard to the

assessment of mental disorders in later life given the increasing levels of physical illness that may present (Powers et al, 2002).

As well as a need for an increased number of professionals, the projected growth in the number of older people demands a different way of working to ensure that the needs of the expanding population are met (Mann, 1995). As the population has aged there has been an 'epidemiologic transition' with a change in the leading causes of death, moving away from the infectious and acute to the chronic (non-communicable disease) and degenerative (Kinsella & Velkoff, 2001). Most deaths from chronic and degenerative ailments (such as cancer, coronary heart disease and stroke) occur in relatively old age (Scottish Executive, 2000c). Perhaps the most important development in terms of meeting the needs of older adults is the need for an increased recognition of the complex relationship between illness that have traditionally been thought of as 'illnesses of the mind' and 'illnesses of the body'.

The role of clinical psychologists is to "reduce psychological distress and to enhance and promote physical well-being by the systematic application of knowledge derived from psychological theory and data" (BPS, 2001). Inherent in this definition is an awareness that most illnesses, mental and physical, are influenced by a combination of biological, psychological and social factors (Ageing & Health, 2001). Our understanding of the relationship between mental and physical health is rapidly increasing and as such, there is an increased need for psychological services to become involved in areas that have traditionally been seen as 'medical'. Although it is a topic that will be considered in more detail later (with reference to the need to

cautiously interpret many studies assessing anxiety in older adults) it should be noted that failure to meet the psychological needs of older people with medical illness has been found to affect recovery from illness (e.g. Everson, Roberts, Goldberg & Kaplan (1998) report that morbidity rates post stroke increase markedly if depression is left untreated). Significant rates of anxiety have also been found to increase recovery time after an operation or illness, lead to subsequent earlier admission to hospital and residential care. If left untreated, anxiety is also thought to lead to a deterioration in health of the older adult and an increase in morbidity (Bennett & Mowat, 1998; Ormel et al, 1997). Poor psychological health – even more so than the severity of the illness itself – is associated with higher use of health services (Hunt, 1988), longer hospital stays and greater mortality (Haga, Shibara, Uneo, Nagai, 1991; Kok, Heere, Hooijer, Dinkgreve & Rooijmans, 1995). An ageing population will experience more of these health disorders and require more psychological support to overcome any subsequent difficulties.

Section one summary

Although many prominent geriatrician researchers (e.g. Blumenthal, 1977; Bromley, 1975; Buss & Pfeiffer, 1969; Butler & Lewis, 1973) have long argued that anxiety is likely to be a major problem for older adults there has been a distinct lack of research investigating the various aspects of anxiety disorders in older people. Indeed, it has been argued that anxiety remains probably the most under addressed psychiatric problem of old age (Sheikh, 1992). Possibly, the difficulties inherent in the assessment, diagnoses and treatment of anxiety in older age may account for this lack of research. However, the current and projected growth in the number of adults

reaching older age suggest that, although fraught with difficulties and complexities, the need for good quality research into anxiety in later life can no longer be ignored. The difficulties must be acknowledged, addressed and, with careful and considerate planning, overcome.

Section Two: Prevalence of the anxiety disorders in older adults

Although there is considerable debate regarding the precise epidemiologic figures, over recent years there has been a growing realisation that anxiety and anxiety related disorders are major health problems for older adults in our society (Beekman et al 1998; Blazer, 1997; Blazer, George & Hughes, 1991; Kogan et al, 2000; Stanley & Beck, 2000; Stanley, Novy, Bourland, Beck, & Averill, 2001). The Epidemiological Catchment Area (ECA) survey (Reiger et al, 1988) was one of the first studies to provide quality information on population prevalence rates for older adults. The ECA survey reported a one-month prevalence rate of 5.5 percent for all anxiety disorders in individuals who were over 65 years. As Stanley & Beck (2000) point out, although such figures may lead to the conclusion that anxiety is not a significant mental health problem, the anxiety disorders were in fact more than twice as prevalent as affective disorders and four to seven times as prevalent as Major Depressive Disorder (Reiger et al, 1988; Weissman et al, 1985).

The prevalence rates for specific anxiety disorders (as defined in the DSM, American Psychiatric Association (APA), 1994, 2000) vary considerably but the general consensus across studies is that phobias are most common, closely followed by

generalised anxiety disorder (GAD). Lindesey, Briggs & Murphy (1989), in a study in the Lewisham and North Southwark districts of England, found total prevalence rates of 10.0 percent for phobic disorder and 3.7 percent for GAD in people aged over 65 years. The ECA survey found that phobias (agoraphobia, social phobia and simple phobia), with a prevalence rate of 4.8 percent were the most common anxiety disorder amongst older adults. Much lower prevalence rates have been reported for obsessive-compulsive disorder (0.8 percent) and panic disorder (0.1 percent). GAD was estimated to have a prevalence rate of 4.6 percent by the ECA survey but the data collection method used may have underestimated how frequently this disorder occurred (the ECA utilized DSM-III-R which meant that GAD was not diagnosed if another disorder was present. If current diagnostic practices using DSM-IV were followed the prevalence rate is likely to have significantly increased). Blazer et al (1991) found the highest 6-month prevalence rate for simple phobia (9.6 percent), followed by agoraphobia (5.2 percent) whilst panic disorder (.04 percent) and obsessive-compulsive disorder (1.5 percent) were much less common. They found the 6-month prevalence for GAD to be 1.9 percent (although again, they used DSM-III diagnostic criteria and the considerations documented above must be noted).

The ECA survey also found that older women were much more likely to experience an anxiety disorder relative to older men (with two female: one male ratio). A number of the epidemiological studies conducted have found lower estimates of frequencies of anxiety disorders in older adults when compared to younger adults (e.g. Bland, Newman & Orn, 1988; Reiger et al, 1988) yet others have found higher

rates amongst older adults (Blazer et al, 1991; Hersen & Van Hasselt, 1992; Hersen, Van Hasselt & Goreczny, 1993; Myers et al, 1984) Flint (1994) provides a comprehensive review of the epidemiology of anxiety in older adults, with many of the studies conducted finding similar rates of prevalence to those discussed above.

Difficulties in obtaining reliable prevalence estimates

There are a number of different factors that may lead one to question the accuracy of the estimates of prevalence studies that have found. One of the major issues concerns the assessment of anxiety in older adults and, as this is the central topic being considered in this thesis, this will be discussed in more detail below. Nonetheless, it should be noted that the method of assessment and associated complexities will obviously impact on the prevalence rates reported. However, there are a number of other methodological differences and difficulties that cast doubt on the reliability of the prevalence studies conducted so far.

Firstly, the prevalence figures reported so far have, in the main, been based primarily on community-dwelling older adults, who are likely to have lower rates of anxiety disorders than those who live in institutions. Therefore, an important factor to take into account is the living circumstances of other older adults.

Another important methodological difficulty is the fact that different studies tend to have different inclusion criteria making any comparison of prevalence rates difficult. Some studies conducted consider samples of age 50 and older as 'older adults' whilst

others set a higher age baseline. Also, many ignore the faster growing segment of the population, those aged 70 and above (Pearson, 1998).

Few of the studies conducted to date have used DSM-III, DSM-III-R or DSM-IV (APA, 1994, 2000) diagnostic categories and this limits the comparisons that can therefore be made between studies with different populations in different geographical areas. As will be discussed below, DSM is not uniquely tailored to account for specific older adult issues (such as tendency to report somatic symptoms) yet no better clinical and clinician communication system exists at present. Additionally, as mentioned previously, many of the studies that had adhered to DSM classification have used a hierarchical approach to diagnoses, leading to a likely underestimate of anxiety disorders (this point is also discussed in more detail below). However, reporting prevalence rates only for anxiety that meets DSM anxiety disorder classification may not always be accurate. As Kogan et al (2000) point out, it is possible, and indeed likely, that older adults may not always experience symptoms frequently or extensively enough to meet DSM criteria for anxiety disorders but may still experience anxiety symptoms that are sufficient to disrupt their lives (Fisher & Noll, 1996). Numerous studies (e.g. Hersen & Van Hasselt, 1992; Himmelfarb & Murrel, 1983) have found anxiety symptoms severe enough to need treatment in approximately 20 percent of the older adult population, although they are not severe enough to warrant diagnostic categorisation.

Section two summary

In light of the above, it is possible to conclude that the prevalence figures for anxiety disorders may lack validity and reflect an underestimate of the true scope of the problem for many older adults. As the research community becomes more aware of these issues, accurate epidemiological data will be provided regarding the picture of anxiety disorders in older adults. This will hopefully allow risk factors to be identified (Stanley & Beck, 2000) and may facilitate research looking at the efficacy of treatment methods for anxiety in later life. Considering that the current figures do appear to underestimate the extent of anxiety problems it leads to the conclusion that the need for reliable and valid older adult anxiety assessment techniques are overdue. Determining the reliability and validity of assessment instruments for anxiety in the elderly is an essential step in the identification and treatment of anxiety related disorders in this population.

Section Three: Assessment of anxiety in older adults Relevant issues

A major problem facing researchers of the psychological functioning of older people in general, and of anxiety disorders in particular, is the fact that existing measures (e.g. clinician rated and self-report materials) have been developed and validated primarily on a younger population. There are a number of important reasons why the use of such tools may not represent a valid or reliable assessment approach and why it is crucial to use instruments that have adequate psychometric properties for the

older adult population. Firstly, as Himmelfarb & Murrel (1983) discuss, gerontological researchers have long argued that there may be problems in assuming equivalence between the presentation and experience of anxiety in older and younger adults. They have argued that the underlying psychological structure may be quite different from that in younger people and that differences in reliabilities of scales may exist between age groups (Labouvie, 1980; Schaie, 1978). Secondly, another factor to consider is the comorbidity between anxiety and other psychiatric conditions, in particular depression. Thirdly, research evidence also points to the finding that older adults tend to report anxiety differently to younger adults, somatising their psychological distress, and this can obviously lead to difficulties in the assessment of anxiety (Lasoki, 1986; Oxman, Barrett, Barrett & Gerber, 1997). Finally, there is also the highly salient issue with older adults of a significant overlap between anxiety complaints and medical problems. These issues are discussed in more detail below.

Possible different psychopathologies of anxiety in older and younger adults

There is the possibility, as yet in need of further exploration, that anxiety presents differently in older adults than in younger adults, with differences in the nature of worries and in the affective experiences of older and younger adults (Lawton, Kleban & Dean, 1993).

Beck, Stanley & Zebb (1996) examined fears in those diagnosed with GAD and found that the mean scores of older adults on levels of worry, anxiety, social fears

and depression were comparable with those found in a younger population. Raj, Corvea & Dagon (1993) found that older adults with panic disorder did not differ significantly when compared to individuals in middle adulthood. However, other studies have found that there are important differences in the experience of worry and related symptoms between older and younger people. Person & Borokovec (1995) reported that older adults worried most about health and least about work whereas younger people were most concerned about family and finances. Powers, Wisocki & Whitbourne (1992) found that, when compared to a college-group of individuals, older adults worried less about social events and finances. Lawton et al (1993), found differences in the factor structure and frequency of affect in three age groups (young individuals aged between 18-30, middle-aged individuals between ages 31-59 and older adults aged 60 and over). The authors suggest that the differences reflect cohort effects in respect of the cognitive component of emotion, with older adults reporting less of almost every negative emotional state assessed. Shapiro, Roberts & Beck (1999) found that the cognitive and affective dimensions that are important in distinguishing depression and anxiety in younger samples were not as useful amongst the older population.

Other similar studies are discussed in Stanley & Averill (1999). Although it is as yet unclear whether these and related findings reflect actual variations in the experience of anxiety they may obviously be influencing the assessment of anxiety in older adults, particularly if the questions which reflect anxiety complaints in younger adults do not apply to the anxiety experience of older adults.

Comorbidity of anxiety and other psychiatric disorders

Comorbidity refers to the concurrent presence of independent psychological disorders. In instances of comorbidity, the patient meets diagnostic criteria for more than one syndrome and is therefore assigned multiple diagnoses (Sanderson & Wetzler, 1991).

The comorbidity of mood and anxiety disorders has been well documented and occurs in younger and well as older adults (Cloninger, 1990). In the ECA study (Regier et al, 1988) it was estimated that, during a 6-month period, anxiety occurred in 33 percent of adults with a depressive disorder, and depression was present in 21 percent of those with an anxiety disorder (these figures are derived from younger adults and are, unfortunately, not available for the older adults who participated in the study). In older adults, GAD is most likely to comorbidly present with depression (Blazer, 1997) and it has been estimated that up to two-thirds of older adults with either depression or anxiety have overlapping symptoms (Schneider, 1996). Older people who present with anxiety may actually be suffering from a major depressive disorder (Hinrichsen, 1990) and highly anxious individuals may also exhibit symptoms of depression (Gurian & Miner, 1991), more so than younger adults (Fuentes & Cox, 2000; Jacoby & Bergmann, 1995). The Guys/Age Concern survey (Lindesey et al, 1989) found that 39 percent of phobic participants also had depression, compared with 11 percent of nonphobic participants. This difference was statistically significant. A review of further studies can be found in Flint (1994).

It is worth noting however, that due to methodological issues the exact prevalence of comorbidity has, in the past, been difficult to estimate. As mentioned earlier, the approach often taken (and adhered to in earlier versions of the DSM IV, APA, 2000) was to make a hierarchical diagnosis i.e. if the existence of disorders higher in the hierarchy (such as depression) was present this excluded the diagnoses of a disorder lower in the hierarchy (such as anxiety). Therefore, the traditional approach has been to give priority to depressive symptoms, and to interpret anxiety symptoms as indicators of depression. However, there is no irrefutable evidence that shows that anxiety is really a masked depression in older adults (Fuentes & Cox, 2000). Such a hierarchical system of diagnoses has almost certainly led to an underestimate of true cases of anxiety and comorbid presentations (Beekman et al, 1998). The relatively new mixed anxiety-depression disorder discussed by DSM-IV (APA, 2000) may allow equal standing for both anxiety and depression and lead to more appropriate diagnoses and treatment.

The relationship between anxiety and depression is complex and full discussion is beyond the scope of this study. Interested readers are referred to reviews of this topic by Stavrakaki & Vargo (1986) and Liebowitz et al (1990). Nonetheless, the degree of overlap between anxiety and depression (and possibly other psychiatric conditions) in older adults appears to be substantial and is in need of further investigation. In terms of assessment techniques, clarification is required on the ability of assessment tools to make a differential diagnoses, leading to the most appropriate treatment for the older adult.

Comorbidity of somatisation and anxiety

The clinical literature suggests that anxiety may manifest or be reported as somatic symptoms in older adults (McDonald, 1973; Sallis & Lichstein, 1982; Turnbull, 1989). There appears to be a cohort effect, with older adults often being reluctant to report psychological symptoms, tending to attribute the signs of anxiety to physical illness (Lasoki, 1986; Oxman et al, 1997). There are a number of possible reasons for this. Small (1997) suggests that many older adults fail to perceive their difficulties as resulting from anxiety. He attributes this to a generational effect, as many older adults grew up at a time when mental health problems represented a stigma and were a source of great embarrassment. It may also be that they genuinely do not recognise their symptoms as symptoms of distress or, as he suggests, are reluctant to discuss them if they do.

In addition, older adults are more likely to attend their general practitioner with anxiety-like complaints in preference to other mental health care professionals. This can possibly be attributed to the cohort embarrassment hypothesis or, as Lasoski & Thelen (1987) point out, older adults may simply be unaware of the mental health provision available, given that the service was unlikely to be available when they were younger. However, differentiating between anxiety symptoms and somatisation amongst older adults is particularly difficult given the fact that physical illness occurs more commonly in older age and many common illnesses in later life produce symptoms that qualified clinicians find difficult to distinguish from anxiety (Fuentes & Cox, 2000). It may simply be that older adults are experiencing the same

assessment difficulties related to anxiety that clinicians experience and believe that their general practitioner is in the best place to discuss their concerns.

There may also be a tendency for clinicians to exacerbate this problem of somatisation of anxiety by older adults by conforming to the 'understandability hypothesis' (Blanchard, 1996). This is basically age-related prejudice, with clinicians agreeing that certain fears are reasonable in older adults due to their age and therefore not considering them as symptoms or warranting diagnoses (Beekman et al 1998; Unutzer et al, 1999).

The tendency of older adults to report more somatic concerns than younger adults is likely to cause difficulties with reference to self-report measures and norms developed on a younger population (Morin et al, 1999). Since most anxiety scales are heavily loaded with somatic items, a high proportion of nonanxious older adults may fall within the range that is used to identify clinical cases in younger populations.

Overlap between anxiety and medical problems

Symptoms of anxiety are never easy to disaggregate from other psychiatric and/or medical conditions but this problem is magnified in older adults and making a diagnosis can be extremely difficult (Blazer, 1997). Although the importance of assessing and differentiating between medical problems that may explain or create anxiety like symptoms is often noted in the literature (e.g. Blazer, 1997; Stanley &

Beck, 2000) clear differentiation of these often overlapping conditions is an issue that has been inadequately and infrequently investigated. Indeed, given the frequency of medical illness in the elderly, there has been surprisingly little study of anxiety in older, medically unwell patients (Flint, 1994).

As discussed above, specific assessment difficulties include the fact that older adults may attribute anxiety-related symptoms (such as agitation, muscle tension, sleep problems, tremor, nausea, sweating, dizziness) to physical causes (Frazer, Leicht & Baker, 1996; Gurian & Miner, 1991; Small, 1997). Such reporting of symptoms will obviously lead to difficulties in making a differential diagnoses of anxiety. Other symptoms of anxiety – including restlessness, fatigue, difficulty concentrating, irritability, muscle tension and sleep disturbance – may be confused (both by the older adult and the clinician) with non-specific symptoms associated with ageing (Blazer 1997).

Additionally, there is a high rate of medical co-morbidity in older adults (Ames, Flynn & Harrigan, 1993; Haley, 1996; Shapiro, Roberts & Beck, 1996) and many older adults suffer from several chronic illnesses (such co-morbidity is especially prominent in the 'oldest old, the fastest growing sector of the population) (Wood & Bain, 2001). In developed countries cardiovascular diseases (CVD) are the main cause of death and disability and are more likely to occur in the older adult. At present 48.6 percent of deaths are caused by CVD and, although rates are declining, it is expected that by 2020 a third of all deaths are expected to be due to CVD (WHO, 2001). In Scotland, the main causes of death are cancer, coronary heart

disease and stroke, which between them account for nearly 60 percent of deaths (Scottish Executive, 2000c). All occur more frequently in older adults and it is thought that by the age of 74, one in three men and one in four women can expect to be diagnosed with cancer.

It is well known that certain medical conditions can create anxiety like symptoms. For example, hypoglycaemia, pheochromocytoma and hyperthyroidism can cause trembling, tachycardia or hyperexcitability. Other conditions such as silent myocardial infarction, pulmonary embolism and stroke can lead to weakness, dizziness and respiratory distress (see Cohen, 1991; Flint, 1994; Morrison, 1997). Other medical conditions associated with anxiety in older adults include, for example, reactions to certain drug combinations and withdrawal effects and other physical illnesses (endocrinologic disorders; cerebral infarction, neurologic conditions; infection; cardiovascular disorders; metabolic disturbances). It can therefore be difficult to differentiate between symptoms of the medical illness and symptoms of anxiety. The assessment issue is complicated by the fact that both anxiety symptoms and disorders are frequently present in those with a medical illness (although in older adults the prevalence is estimated to be less than the prevalence of anxiety in younger and middle-aged patients, Cassem, 1990; Magni & DeLeo, 1984). For example, Magni, Schifano, deDominicis & Belloni (1988) found that 40 percent of older Italian medical inpatients also reported significant anxiety symptoms and, in a study assessing low-income socially disadvantaged older adults, Arean & Alvidrez (2001) reported that almost 70 percent of medically ill patients were in need of mental health treatment.

The interaction between anxiety and patients who have undergone coronary artery bypass grafting (CABG) surgery has received some research attention and highlights the complexities of assessing anxiety in older adults who have a medical illness (Ben-Noun, 1999; Duits et al, 1998). The relationship between psychological distress and cardiovascular disease is complex. There are a number of studies that have administered both anxiety and depression self-report scales to older adults in order to assess psychological functioning following CABG surgery but many of these studies were not exclusively designed for older adults and many did not assess the psychometric properties of the questionnaires they administered (Boudrez & De Backer, 2001; Duits et al, 1998; Nelson, Zimmerman, Barnason, Nieveen & Schmadere, 1998). Additionally, none of the studies have been carried out in Britain. The results must therefore be interpreted with caution at present.

The studies report that psychological well-being improves in the six month period after the CABG, with patients becoming less anxious and depressed. A recent study reported that long-term favourable psychosocial outcomes were found in patients who had their CABG surgery between 7-22 years previously (Ben-Noun, 1999).

Several studies have suggested that chronic anxiety is a risk factor for developing cardiovascular disease as well as being associated with an increased risk of mortality, specifically mortality from coronary artery disease (Ballenger et al, 2001; Coryell, Noyes & Clancy, 1992; Kawachi, Sparrow, Vokonas & Weiss, 1994; Ormel et al 1997). In a review study, Duits et al (1997) found that many psychosocial outcomes

following the operation were predicted by pre-operative assessments of anxiety and depression. Such findings would indicate that appropriate identification of preoperative risk factors might improve the development of individually tailored interventions for patients at risk of postoperative psychological problems. In a study specifically designed to assess distress in older adults after cardiac surgery, Oxman, Barrett, Freeman & Manheimer (1994) found that almost 50 percent of patients met DSM-III (APA, 1994) for the adjustment disorder within one month of their operation. At six months post-surgery approximately 30 percent were still showing evidence of emotional functioning impairment and this impairment was related to anxiety and depression levels immediately following the operation. Others have suggested that the relationship is unclear regarding whether anxiety disorders confer risk and/or exacerbate coronary artery disease and suggest that differentiating these disorders and learning how they influence each other is imperative for clinical practice (Fleet, Lavoie & Beitman, 2000).

Further information on interaction between anxiety and medical complaints may reveal important etiological findings (e.g. whether anxiety interacts with medical illness to modify the course of the disease or whether it just amplifies its associated effects) but there is no conclusive information yet available (Katz, 1996; Stanley & Beck, 2000).

However, psychological reactions to the meaning and impact of the illness can also cause worry and anxiety symptoms. For many older adults excessive worry and anxiety are not easy to distinguish from appropriate anxiety and worry. For example,

an individual who suffers from a severe and potentially fatal disorder such as congestive heart failure may express all the symptoms of anxiety over many months and yet be responding normally to the disease.

Such complex presentations obviously suggest the need for thorough medical and psychological evaluation (Cohen, 1991; Powers et al, 2002). An important point to note is that this overlap between medical and anxiety-like symptoms may result in artificially elevated scores on the measures of anxiety developed for a younger population with no physical problems, as they often include somatic items (Kogan et al, 2000).

Greater knowledge and understanding of the interaction between medical illness and anxiety symptoms will obviously lead to more appropriate assessment and interventions. At present, due to a lack of good quality assessment measures that consider this interaction, a thorough history taking with an attempt to clarify a temporal relationship of symptomatology with the onset of medical illness or beginning of medication is needed for appropriate assessment. It has been suggested that there are a number of 'clinical clues' that are suggestive of an underlying medical condition related to psychiatric symptoms. These include: atypical age of onset of symptoms; lack of a family history of mental illness; lack of a past personal history of mental illness; poor response to conventional treatments; more severe symptoms than are typical; the presence of abnormal cognitive functioning (Blazer, 1997). Physical examination and laboratory studies also complement a good history. As Blazer (1997) suggests, before a diagnoses can be made other diagnoses in the

differential must be excluded by thorough psychiatric and physical examination as well as laboratory testing.

Section three summary

Outlined above are some of the reasons why assessment tools need to be specifically developed or validated for older adults: possible different psychopathologies of anxiety in older and younger adults and comorbidity with depression and possibly other psychiatric conditions (Cloninger, 1990; Flint, 1994; Labouvie, 1980). The overlap between anxiety and medical illness is especially important considering the tendency of older adults to somatise psychological distress, the tendency for certain medical conditions to produce anxiety-like symptoms and the interaction between medical illness and anxiety (Blazer, 1997; Lasoki, 1986; Oxman et al, 1997). The growth in the 'oldest old' sector of the population must also be taken into account when measures are being evaluated. In addition, assessment tools for this age group must also be sensitive to ageing-related changes in sensory and/or cognitive functioning (Stanley & Beck, 2000).

Section Four: Critique of current assessment methodology research

Numerous studies have highlighted the need for further information concerning the psychometric properties of anxiety measures and the phenomenology of anxiety in older adults (Fuentes & Cox, 2000; Small, 1997; Stanley & Averill, 1999; Stanley & Beck, 2000). However, the empirical literature regarding the assessment, diagnosis

and treatment of anxiety disorders in older adults is sparse (Hersen et al, 1993; Sheik & Salzman, 1995). Research which takes into account the specific issues relevant to older adults, has only really just begun to assess the psychometric properties of relevant research instruments within this population (Snyder, Stanley, Novy, Averill & Beck, 2000). There are two different research paths that have been taken, both of which attempt to address some of the issues raised above. Firstly, studies have begun to assess the psychometric properties of the plethora of anxiety measures that were initially developed and validated with younger adults. Secondly, in order to develop instruments that specifically address the assessment issues common in the presentation of older adult anxiety some measures are being developed specifically for older adults. A review of the current studies addressing these issues is detailed below.

Clinician-rated measures

There is little consensus on the most useful approach to measuring and diagnosing anxiety in older adults (Stanley & Beck, 2000). However, in addition to clinical interview, researchers often use interview scales to determine the prevalence of psychiatric disorders.

A review of the most commonly used schedules (e.g. Geriatric Mental State Schedule (GMS) (Copeland et al, 1987); Diagnostic Interview Schedule (DIS) (Robins, Heizer, Croughan & Radcliff, 1981) is provided by Fuentes & Cox (2000). Over the years numerous limitations of the DIS have been reported in the literature (Beidel & Turner, 1991), specifically with reference to the diagnoses of anxiety.

Both the above scales produce response bias in older adults. Therefore, Fuentes & Cox (2000) conclude that anxiety schedules for this group are probably better suited to providing general indications of anxiety rather than definitive rates of anxiety disorders. A recent study by Beck, Stanley & Zebb (1999) examined the psychometric properties of the Hamilton Anxiety Rating Scale (HARS: Hamilton, 1959). Although the HARS has a heavy somatic content, their data provided preliminary support for the potential utility of the HARS with older adults. However, they concluded that due to concerns regarding the ability of the measure to discriminate between anxiety and depression further research is needed.

A number of authors have investigated the utility of the Anxiety Disorders Interview Schedule (ADIS-R; DiNardo, Moras, Barlow, Rapee & Brown, 1993) (Beck et al 1996; Stanley, Beck & Zebb, 1996) and found (using videotaped interviews) perfect interrater reliability for diagnoses of GAD, social and simple phobia and panic disorder. The ADIS-R was less reliable for diagnoses of coexistent major depression and kappa scores of .58 were reported. However, the findings were mainly supportive and the authors conclude that further investigation of this potentially useful instrument is warranted.

The Structured Clinical Interview for DSM-III-R Axis 1 (SCID-I) (Spitzer, Williams, Gibbon & First, 1988) produced very good interrater reliability for anxiety disorders (Segal, Hersen, Van Hasselt, Kabacoff & Roth, 1993; Segal, Kabacoff, Hersen, Van Hasselt & Ryan, 1995). In the first study a total of 73 older adults were assessed, with all interviews being either audiotaped or videotaped and subsequently evaluated

by another clinician. Kappa coefficients for the different anxiety disorders investigated ranged from .73 to1.00. For specific diagnosis of major depression the kappa coefficients were between .70 to.79. Although, as with the ADIS research reported above, the kappa scores are likely to be elevated due to the use of taped interviews to measure interrater reliability, the authors conclude that the data suggest that the SCID is a useful tool for evaluating anxiety in older adults.

Section four: summary of clinician-rated measures

There are a number of potentially useful interview schedules that, although in the main were not developed specifically for older adults, appear to be useful instruments in assessing their anxiety. However, the research is limited in scope and generalisation and appears to need further development with reference to differential diagnoses. Another important issue to consider is the lack of research pertaining to the updated DSM-IV (APA, 2000). The research reported above mainly used the diagnostic categorises described in DSM-III-R (APA, 1994) and, as has already been discussed, there are important differences between the two versions in terms of anxiety disorders. Only one study to date has published interrater reliability statistics for ADIS-IV and DSM-IV categorisation and they found that diagnostic agreement was 93 percent (Stanley et al, 2001). Future research should examine the utility of the two potentially useful schedules (ADIS, DiNardo et al, 1993 and SCID, Spitzer et al, 1988) with reference to the updated diagnostic manual.

Self-report anxiety measures

As well as clinical interview and clinician led measures, self-report measures are another important tool in assessing anxiety for people of all ages. The self-report anxiety measures that are often administered to older adults are measures that have been developed for younger and middle-aged adults and their reliability and validity in older adults has not yet been adequately established (Stanley & Beck, 2000). Given the potentially meaningful differences in the experience of anxiety between younger and older adults discussed above, in order to accurately diagnose anxiety, it is important to evaluate these measures with the special concerns of the older adult in mind. Such measures are particularly useful for older adults as they minimise the fatigue effect common in long test batteries and structured interviews.

There is a small but evolving literature concerned with evaluating existing self-report anxiety measures to ensure that the assessment instruments are sensitive to the needs of older adults (Beck, Stanley & Zebb, 1995; Fuentes & Cox, 2000; Kabacoff et al 1997; Stanley & Beck, 2000). The studies have used a number of different methodologies and examined different aspects of reliability and validity of a number of self-report measures. The current findings are discussed below.

Perhaps the scale that has been investigated most frequently is the Beck Anxiety Inventory (BAI; Beck & Steer, 1993). This 21-item measure was developed to measure and differentiate between symptoms of anxiety and symptoms of depression. Since its relatively recent introduction it has attained research credibility, reliability and validity with younger adults (Beck, Epstein, Brown & Steer, 1988;

Gillis, Haaga & Ford, 1995) and is frequently utilised in studies of anxiety in people of all ages (Piotrowski, 1999). Kabacoff et al (1997) administered the BAI to 217 older adult psychiatric outpatients (aged 55 and over with a mean age of 66 years) and found that the BAI demonstrated excellent internal consistency and successfully differentiated between patients who had been diagnosed as either having or not having an anxiety disorder according to the SCID (Spitzer et al, 1988). In a similar study, Wetherall & Arean (1997) asked 197 older adult medical outpatients (aged 52-92 with a mean age of 68) to complete a BAI. Again, the authors concluded that the instrument demonstrated high internal consistency and found no significant sex differences. They also found that the BAI successfully distinguished between anxiety and depression, with good discriminant validity.

Steer, William, Kay, & Beck (1994) found that the BAI levels of older medical outpatients were significantly lower that those of elderly psychiatric patients, concluding that their results supported the utility of the measure with older adults. However, more recent studies have suggested that separate norms should be used with the BAI when they are administered to older adults, with particular reference to different demographic factors. Owens, Hadjistavropoulos & Asmundson (2001), in a community study of 109 people between the ages of 43 and 93 years of age found a significant age difference (with older people scoring significantly lower than younger people). They also found a sex difference, with males obtaining significantly lower scores than women. Similar results were found by Morin et al (1999), with regard to sex differences. However, in their study conducted with 282 community living and residential living older adults (aged 55 and over with a mean age of 70) they found

that the oldest older adults scored higher on the BAI and, perhaps as would be expected, that the residential dwellers scored higher than the community dwellers. They found that the highest scoring participants were scoring statistically significantly higher on the somatic questions, which possibly become more prevalent with increased age and dependence. Although the results are mainly positive, more research is needed, particularly with respect to the age, sex and abode of the older adult as these factors may influence the cut-off point for anxiety on the heavily somatic loaded BAI.

Another well-known questionnaire assessing general anxiety that has received limited research is the Spielberger State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch & Lushene, 1970). The STAI is a 40-item instrument which includes both state and trait scales, respectively measuring transient and enduring levels of anxiety. The STAI has strong psychometric support with younger adults (Spielberger et al, 1970).

Two studies examined the psychometric properties of the STAI with older adults, using participants who were selected after completing a semi-structured interview (ADIS-R; DiNardo et al, 1993). Stanley et al (1996) administered the STAI to 50 community dwelling older adults who met diagnostic criteria for GAD and a control group of 94 older adults who met no anxiety disorder criteria. The STAI was able to successfully differentiate between older adults with GAD and the control group. Good internal consistency was demonstrated for both the STAI scales. Kabacoff et al (1997) found similar results when they administered the STAI to over 200 older adult

psychiatric outpatients who were diagnosed according the SCID (Spitzer et al, 1988). Patterson, O'Sullivan & Spielberger (1980) asked 51 older adults (ranging in age from 55-87) to complete the adult version of the STAI. They recommended the use of the STAI with older adults. However, they also emphasised the necessity of distinguishing between and measuring both state and trait anxiety in older adults. Himmelfarb & Murrell (1983) reported good internal consistency and discriminant validity, although their results should be interpreted with caution due to the heterogeneous nature of their participants and the fact that they did not use any standardised diagnostic criteria to classify participants (Stanley & Beck, 2000). However, in the main, the results to date tend to support the use of the STAI with older adults.

Questionnaires designed to look at worry have also received limited research with older adults. The Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger & Borovec, 1990) is a content non-specific measure of severity of worry that was originally developed for use with younger adults. The questionnaire consists of 16-items that assess an individual's tendency to worry. Good internal and test-retest reliability as well as acceptable discriminant and construct validity has been demonstrated on samples of younger adults with GAD (Brown, Antony & Barlow, 1992; Fresco, Heimberg, Mennin & Turk, 2002; Meyer et al, 1990). Beck et al (1995), in a community study of people diagnosed with GAD (n=47, with a mean age of 68), found that the scale demonstrated excellent internal consistency and adequate convergent validity relative to other self-report measures of anxiety in older adults with GAD. More recently, Stanley, Beck & Glassco (1996) found that the

PSWQ was sensitive to changes in worry severity following psychosocial treatment of GAD. Hopko, Bourland, Stanley, Beck, Novy, Averill & Swann (2000) assessed participants (64 older adults who met DSM-IV criteria for GAD; mean age 66) using the ADIS-IV (DiNardo, 1993) and asked them to complete a battery of tests, including the PSWQ. They found that the PSWQ was particularly useful as a predictor of clinician-rated GAD severity. Stanley et al (2001) administered the questionnaire (amongst a battery of other tests) to 57 older adults, aged 60-80 (mean age 66), with a diagnoses of GAD. Again, the measure was found to be internally consistent but was also found to be unreliable over time (the participants were re-evaluated within 10 weeks of their initial assessment). However, this preliminary data, although in need of extension and replication, does suggest that the PSWQ may be a useful measure of older adults worries at a particular time in point.

Other studies have assessed the utility of a scale specifically developed for older adults, the Worry Scale (WS, Wisocki, Handen & Morse, 1986). The WS is a 35-item questionnaire that covers three categories of concern: finances, health and social conditions. Initial data from both older adults who live in the community and those who are homebound found evidence of normative scores and concurrent validity (Wisocki et al, 1986). However, subsequent research, although finding strong internal consistency and adequate test-retest reliability for finance and social condition subscales, has failed to find similar results for the health subscale. Stanley et al (1996) also found that this measure was sensitive to changes over a 6-month period following psychological treatment for GAD. The relatively high estimates of prevalence for phobic disorders in older adults has also led to a few studies being

conducted on phobia self-report questionnaires. Liddell, Locker & Burman (1992) examined the prevalence and distribution of fears in older adults (aged 50 and over) using the Fear Survey Schedule (FSS-II; Geer, 1965). The authors reported sex differences with men reporting less overall fearfulness than women and they also found decreasing fearfulness with increasing age. The Fear Questionnaire (FQ; Marks & Mathews, 1979) was examined for use with older adults by Stanley et al, (1996). Their results indicated that the FQ did not appear to be a viable measure of specific fears in older adults. These results obviously suggest that self-report measures designed to specifically measure fears require further investigation before they can be satisfactorily used with older adults.

Many of the studies reported so far in this review had excluded participants with a medical illness. Given the estimated frequency of the comorbidity between medical illness and anxiety in older adults this is disappointing as it limits the clinical utility of the studies. The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) is a scale that has been specifically developed as a screening instrument for anxiety and depression in medical patients. It is a brief bidimensional self-rating scale, intended for hospital use and for patients attending medical outpatient clinics. In order to avoid the confounding effect of symptoms in physical illness the HADS excludes somatic items. The depression subscale focuses on anhedonia (with five of the seven questions addressing this concept) whilst the anxiety subscale focuses on the emotional and cognitive aspects of anxiety (three of the questions refer to feelings of pain and panic and four items are characteristic of generalized anxiety).

In their original study, Zigmond & Snaith (1983) found that the HADS reliability distinguished between anxiety and depression in medical outpatients who were aged 16-65. However, in a study addressing its usefulness in older adults inpatients with an acute medical condition (participants ranged in age from 69-99, with a mean age of 82 years) it was found that the HADS lacked sensitivity and specificity (Davies, Burn, McKenzie, Brothwell & Wattis, 1993). Flint & Rifat (2002) examined the factor structure of the HADS with older patients with major depression. Although not specifically recruited, patients over the age of 60 years who had a chronic medical condition were included in their study (unfortunately they do not report the percentage of people with a medical condition who participated). They conclude that the HADS functions as a bidimensional measure of depression and anxiety in older adults with major depression. This suggests that the HADS is a valid instrument for measuring severity of anxiety, independent of other depressive symptoms but provides little information on older adults with a co-existing medical illness. Obviously further research is needed before any firm conclusions regarding the usefulness of the HADS for older adults can be made.

Section four: summary of self-report measures

Although the studies above provide us with preliminary data regarding the utility of clinician-rated and self-report measures, Fuentes & Cox (2000) suggest that due to the small number of studies in this area and their inconsistent findings there is a need for further investigations of the psychometric properties of anxiety scales when used with older people. The studies that have investigated this topic and are discussed

above are often limited by small and unrepresentative sample sizes and often have methodological difficulties (Stanley & Beck 2000). Many of the issues raised earlier in the discussion with reference to the unreliability of the prevalence rates also apply to these studies on psychometric properties. Methodological difficulties include the different age inclusion criteria used by different studies, the different methodologies used (although some of the studies categorised anxiety disorders according to DSM criteria many did not). Additionally, most of the studies reported were conducted with white Americans who were not socially disadvantaged. As with other psychiatric problems, anxiety disorders are more likely to occur in socially disadvantaged groups and research is needed to address the needs of this group of older adults (Arean & Alvidrez, 2001).

Another factor limiting the usefulness of the studies conducted so far is the fact that different studies have examined different, and therefore incomparable, psychometric properties (the range includes internal consistency, convergent, concurrent and discriminant validity, test re-test reliability, normative scores and prediction of clinician ratings). Although it is important that all these different psychometric aspects of the questionnaires are thoroughly investigated the small number of studies conducted limit the generalisation of the results and the comparison of them.

Additionally, although many of the studies included a discussion of comorbid psychiatric difficulties experienced by the participants with the anxiety disorders, few of the studies, with the exception of the research on HADS, has specifically looked at the utility of the self-report measures in participants who also have a

medical illness. Indeed, older adults with a medical illness are often excluded from the studies that have been conducted (e.g. Stanley et al 2001, who excluded participants who had any untreated medical conditions that could account for anxiety symptoms or interfere with treatment). Given the points raised earlier regarding the complexities and frequency of co-morbid medical illness in older adults this appears to be a major oversight which will limit the clinical applicability of the results found.

To conclude, although the research studies conducted so far provide a starting point for future research studies they are limited in the information that they provide. A more structured approach, administering self-report measures to reliability differentiated pathological groups (major depression, anxiety disorders) and contrasting with psychologically normal and healthy older adults and to psychologically normal but unhealthy older adults is required (Hersen & VanHasselt, 1992). Consistent age and sex criteria need to be clarified and the studies should ensure that all sections of the older adults community are invited to participate.

The current study aims to redress some of the methodological shortcomings of the studies identified above by assessing the performance of a number of standardised anxiety scales with a medically compromised older adult population.

Section Five: Aims of current study

For the sake of clarity it is useful at this point to summarise the points raised so far. The increasing number of older adults and the associated psychological and physical health difficulties they are likely to face has been discussed. Prevalence rates should

be interpreted with caution but it is probable that anxiety disorders are the biggest mental health problem facing our ageing population (Blazer, 1997). Although there are many areas requiring further investigation in order to better understand, identify and treat anxiety in older adults, this study is concerned with issues of assessment. The assessment of anxiety in older adults is complex and the factors that need to be taken into account when assessing anxiety in older adults are outlined above. A review of the limited research on current assessment methods has been critically examined. It has been concluded that there is a great need for further research into assessment methods with older adults, especially older adults with a comorbid physical illness.

The primary aim of this study is to investigate the utility of self-report measures in older adults who have a co-existing medical difficulty. As has been discussed, in general, the use of currently available self-report anxiety measures when assessing anxiety in older adults is considered imprudent (Kogan et al, 2000). Most are designed for younger populations and clinicians risk an invalid assessment and diagnosis when using measures for which the psychometric properties are still in question for older adults.

As it is a pertinent and relevant issue given the projected number of older adults who are likely to suffer from coronary heart disease and the overlap with symptoms of anxiety, patients who have recently undergone coronary artery bypass graft (CABG) surgery will be asked to participate. People who have been diagnosed with coronary heart disease are sometimes given CABG surgery. Over 28,000 patients have this

surgery in Britain each year. Coronary heart disease means that the inside wall of the main arteries of the heart (the coronary arteries) have become narrowed by a build-up of fatty material called atheroma. Coronary heart disease can cause angina and heart attacks. Angina is felt as pain or discomfort (breathlessness and/or tightness) in the middle of the chest (or arms, throat, neck or jaw) and is usually brought on by physical exertion or emotional upset as the result of a temporary shortage of oxygen to the heart muscle. The similarity and overlap of symptoms of anxiety and angina can lead to elevated levels of worry and anxiety. The aim of CABG surgery is to bypass the narrowed sections of the coronary arteries. The cardiothoracic surgeon does this by grafting a blood vessel (usually taken from the internal mammary artery, leg or arm) between the aorta and a point in the coronary artery beyond the narrowed or blocked area. Most people have three, four or more grafts at a time, as the surgeon will try to bypass as many blocked arteries as possible (British Heart Foundation, 2001). Discomfort is anticipated for a few weeks after the operation but most patients are out of bed within a day and return home within a week, although full recovery may take several months. For the first three to six months after the operation the patient is likely to be extremely tired in the evening. Between 1-5 percent of patients will suffer some memory impairment after the operation but this is usually temporary and improves within six months of surgery. Patients are advised not to drive for at least four weeks after their operation and, depending on their type of work, not to return to work until three months after the operation (two months for non-manual workers). Between six and nine in every 10 patients who have the operation get immediate relief from angina, lasting for at least five years and most others find that the bypass improves their angina (Wheatley, 1996).

In order to investigate the utility of self-report anxiety measures in older adults who have recently undergone CABG surgery, they will have their psychological distress measured by an interviewer adhering to the semi-structured SCID-IV (Spitzer et al, 1988). This will allow the interview to make a clinical judgement regarding the presence or otherwise of anxiety or mood disorder. The participant will then be asked to complete five self-report measures designed to assess anxiety and depression symptoms.

Study objectives

1. To examine the sensitivity of participant completed self-report questionnaires in assessing anxiety in older adults who have a co-existing medical illness.
2. To determine which self-report measure related most highly with the clinician rating of anxiety.
3. To examine the specificity of self-report questionnaires with older adults who have a co-existing depressive and medical illness.
4. To examine the test-retest reliability of five self-report measures of anxiety and depression when completed by older adults with a medical illness.

This study aims to provide information regarding the specificity and sensitivity of self-report anxiety measures, identifying measures that are appropriate and useful in aiding differential diagnosis for older adults with a medical illness. It is hoped that this research will be clinically useful to the practising clinician and add to the database of knowledge on the assessment of anxiety in older adults. Without a solid

base of psychometrically sound assessment tools, further advances in the psychopathology and treatment of late life anxiety will be limited (Stanley et al 2001). The utility of self-report measures are of particular interest given their brevity and potential use as a screening or outcome assessment tool (Stanley & Beck, 2000). Instruments that can be quickly administered and easily completed are particularly desirable (Kabacoff et al, 1997). They may also be useful in furthering the understanding of the psychopathology of anxiety and developing the treatment of anxiety with older adults (King & Barrowclough, 1991).

Methodology

Full ethical permission for this study was granted by the Lothian Research Ethics Committee (LREC/2001/7/39). The Consultant Cardiac Surgeon in the department of Cardiothoracic Surgery, Royal Infirmary of Edinburgh, also gave permission for the study to proceed.

Participants

A power analysis calculation was carried out to estimate the number of participants required for this study. Assuming an effect size of r=0.5 (this is what Cohen, 1992, refers to as a moderate effect size), and power set at 80% with alpha <0.05,
28 participants would need to be recruited for power to be achieved
(Cohen, 1992, table 2).

Seventy-three older adults were invited to participate in this study and 17 agreed to take part (a recruitment rate of 23 percent). Overall, the average age of participants was 69.5 years (their ages ranged from 61 to 84; sd 6.3). For males (n= 14), the average age was 69.2 years (ages ranged from 61 to 84) and for females (n=3) the average age was 70.7 (their actual ages were 64, 70, and 78 years). All participants had received coronary artery bypass graft surgery (CABG) within the past six months (the participants were interviewed a minimum of six weeks and a maximum of six months after their operation). Demographic information for all participants is provided in the Results Section.

Appropriate inclusion and exclusion criteria were developed for this study.

Inclusion criteria

1. Participants must have had coronary artery bypass surgery within the past six months
2. Participants were aged over 60 years of age
3. Participants were able to give written informed consent

Exclusion criteria

1. Participants were excluded from this study if they were under 60 years of age
2. Participants were excluded if they had insufficient knowledge of English to enable them to be assessed adequately and to satisfactorily provide written consent to treatment.
3. Participants were excluded if there was evidence of organic pathology (MMSE of less than 24; further details below)
4. Participants were excluded if they exhibited psychotic features
5. Participants were excluded if their medical consultant considered their medical condition to be too unstable (criteria for this exclusion included use of intraartic balloon pump after surgery, cardiac arrest or ventricular fibrillation or arrhythmia, transmyocardial revascularisation).

Procedure

Recruitment procedure

Participants were recruited via the Lothian Health Board cardiac rehabilitation service and were patients who have recently undergone coronary artery bypass graft (CABG) surgery.

Step 1 A. Potential participants recruited via method A

All patients who receive CABG surgery in Lothian are referred to the Consultant in Cardiovascular Rehabilitation at the Astley Ainslie Hospital (AAH) for rehabilitation. The patients are normally referred for rehabilitation within six weeks of their operation. These patients were only contacted after the medical consultant had reviewed their referral letter. The medical consultant identified potential participants and excluded those patients whom he thought were likely to be too medically unwell to be approached to participate in the study. A letter was sent on the medical consultant's behalf to the patient, informing them of the study and inviting them to participate (see appendix 1). This procedure was developed in light of recommendations made by the Lothian Research and Ethics Committee. A return stamped address envelope and contact detail sheet was enclosed and the participant was asked to return this to the experimenter if they wished to either participate in the study or be provided with more information about the study (see appendix 2). A copy of the study information letter was also enclosed with the medical consultants letter (see appendix 3). This letter was sent to the patient approximately six weeks after the date of their operation.

Using estimates based on previous years data it had been anticipated that approximately 100 people would be eligible to participate in this study during the recruitment phase. However, due to unforeseen circumstances (see below), only 21 people were eligible for participation. Of these, eight agreed to participate (a response rate of 38 percent). All had undergone CABG surgery within the past eight weeks.

Step 1 B. Potential participants recruited via method B

It had been anticipated that all potential participants could be recruited on a 'rolling' basis, approximately six weeks after they had their bypass surgery. However, due to an outbreak of methicillin-resistant staphylococcus aureus (MRSA) infection, the Cardio-thoracic Unit at the Royal Infirmary of Edinburgh was closed between the months of April and July (in the middle of the main recruitment phase of this study). All patients in Lothian requiring CABG surgery are operated on within this Unit and following a higher than usual incidence of MRSA all operations were suspended. The closure of this Unit was covered extensively on both local and national media. The closure of the Unit obviously produced a great deal of distress and anxiety in potential patients awaiting CABG.

There was no guarantee of when the Unit would be functional again prior to it re-opening and when it did re-open it was anticipated that there would be a much reduced surgery rate within the Unit. This incident compromised referrals and participation in the current study. Therefore, with the permission of Lothian Research Ethics Committee, the recruitment procedure was amended. The names

and addresses of 52 patients who were suitable for recruitment to the study were obtained from a database containing details of patients who had attended rehabilitation at the AAH within the past seven months. General Practitioners were approached and asked to confirm whether or not these patients were alive. The recruitment procedure then followed that described above, with an invitation letter sent on the medical consultants behalf to each patient.

Of the 52 patients approached to take part, nine agreed to participate (a response rate of 17.3 percent). All had undergone CABG surgery more than eight weeks prior to being approached to participate but within the past six months.

Step 2: Contacting potential participants

If the potential participant did not return the contact details sheet they were not contacted again. If they returned the contact details sheet the experimenter telephoned the potential participant and offered to provide them with more information about the study and, if they were satisfied with the amount of information given, asked them to participate. All 17 participants who returned their contact details sheet agreed to participate in the study. The visit was arranged in a place convenient to the participant and all but two participants requested that the visit take place at their home. The remaining two participants were interviewed at the AAH. No travel expenses were offered. A short letter was sent to each patient's GP informing them of their patient's participation in the study (appendix 4).

Interview procedure

Step 3: Interview with participants

After assessing whether the participant was unsure about any aspect of the visit (and answering any queries) the MMSE (see measures below) was administered to each participant. If at this stage there was any evidence of organic pathology the study would have proceeded no further and appropriate advice given. Once they had completed the MMSE the participant was asked to sign an informed consent form (appendix 5). Demographic information was then collected from the participant. A semi-structured clinical interview (a modified version of the Structured Clinical Interview for DSM-IV-TR Axis 1 Disorders; Spitzer et al, 1988) was then conducted with the participant, gathering information about their mood. This, combined with clinical judgement, allowed a decision on DSM-IV diagnosis to be made for each participant. This interview lasted approximately 30 minutes, with variability in length depending on the issues raised. The participant was then asked to complete the five self-report questionnaires detailed in 'measures' below. The questionnaires were administered in randomised order. If the participant required any practical assistance completing the questionnaires this was offered. Assistance was only given by reading the questions and possible responses and no help was given on question interpretation or the choice of particular responses. On average, the whole interview process lasted approximately one hour.

Step 4: Further assistance

If during the visit the interviewer diagnosed that the participant was suffering from anxiety or depression further help was offered. The participant was offered the 'self-help' manual for anxiety and/or depression that is supplied with the "WHO Mental Disorders in Primary Care" programme (WHO, 1998) (appendix 6, 7). The last page of this manual, which provides space to write in details of any local services that may be able to provide suitable assistance, was also completed. With the permission of participants, the participant's GP was also informed of any difficulties. If the participant was still to attend the AAH for rehabilitation following their surgery the rehabilitation team were also informed of any psychological distress (see appendix 8 for outline of draft report). Protocol procedures were already in place for the rehabilitation team to refer the participant to a clinical psychologist if necessary.

Follow-up procedure

Step 5: Reliability check

The participant was sent the battery of self-report questionnaires in the post approximately two weeks after their appointment (see appendix 9). They were asked to complete them and return them to the interviewer at the AAH in the freepost envelope provided.

Step 6: Final Step

If the participant did not return the questionnaires no reminder letter was sent, as per instructions given by the Lothian Research and Ethics Committee. All patients (including those who did and did not return the freepost questionnaires) were sent a thank you letter.

Measures

1. Assessment of cognitive functioning

The mini-mental state examination (MMSE; Folstein, Folstein & McHugh, 1975) is a commonly used and quickly administered cognitive assessment (usually it can be administered in less than five minutes). It includes a variety of questions assessing orientation, registration, attention and calculation, recall, language and praxis. The maximum score is 30 and the cut off score, suggestive of cognitive difficulties, is 24 or less. It has been standardised for use with older adults regardless of education status (Jones & Gallo, 2001) and with older adult medical patients (Vertesi et al, 2001). (see appendix 10).

2. Demographic information

The demographic questionnaire contained questions relating to age, gender, education, socio-economic income and marital status. Details regarding the CABG surgery were also collected, in addition to information regarding the participants

previous and current health. Two general questions were also administered. The first one asked the participant "How would you rate your quality of life". There were five available responses, ranging from 'very good' to 'very poor'. The second general question asked the participant "How satisfied are you with your health" and the five available responses ranged from 'very satisfied' to 'very dissatisfied'. The participant was also asked whether there were any other important issues they wished to discuss with the interviewer. (see appendix 11).

3. Semi-structured interview

A clinician-rated semi-structured interview using the anxiety and mood disorders subscale of the Structured Clinical Interview for DSM IV (SCID IV; Spitzer et al, 1988; DSM-IV, APA, 2000) was undertaken with all patients. Several studies have demonstrated the potential utility of the SCID for diagnosing anxiety and related disorders among older adults (Stanley & Beck, 2000). This will be used to determine whether or not the participant meets the DSM-IV diagnostic criteria for any anxiety disorder or depression. Somatoform disorders were also assessed.

4. Self-report measures

Beck Anxiety Inventory (BAI; Beck et al, 1988) (see self-report anxiety measures section of introduction for further details). The BAI is a 21-item questionnaire commonly used to assess severity of anxiety symptoms (e.g. nervousness, difficulty breathing, fear of dying) and monitor the progress of intervention work. Participants rate how much each symptom distressed them over the past week using a four-point

scale ranging from 'not at all' to 'severely'. The possible range of scores is 0-63, with a higher score indicating higher levels of anxiety (appendix 12).

Penn State Worry Questionnaire (PSWQ; Meyer et al 1990) (see self-report anxiety measures section of introduction for further details). The PSWQ is a 16-item scale that assesses an individual's tendency to worry (e.g. 'Many situations make me worry', 'I know I shouldn't worry about things but I just can't help it'. Several statements are stated in a reverse fashion in order to reduce acquiescence (Myers et al, 1990). Participants rate how typical each statement is for them, on a five-point scale ranging from 'not at all typical of me' to 'very typical of me'. The scores range from a possible 16-80 (with a higher score indicating higher level of worry) (appendix 13).

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) (see self-report anxiety measures section of introduction for further details). The HADS is commonly used as an outcome measure in rehabilitation studies. It is a 14-item questionnaire, assessing symptoms of both anxiety (e.g. 'I feel tense or wound up', 'I get sudden feelings of panic') and depression (e.g. 'I still enjoy the things I used to enjoy', 'I have lost interest in my appearance'). Participants rate on a four-point scale either how often or with what severity the statement applies to them. The scores for the anxiety scale range from 0-21 (with a higher score indicating higher levels of anxiety), with a similar range for the depression scale (appendix 14).

Short Anxiety Screening Test (SAST; Sinoff, Ore, Zlotogorsky & Tamir, 1999). The SAST is an easily administered, recently developed, 10-item questionnaire, developed specifically to assess anxiety disorder in the elderly, especially in the presence of depression e.g. 'Can you relax?', 'Do you feel keyed up, on edge?', 'Do you feel you have control of your life?'. The instrument includes somatic complaints, often the manifestation of anxiety in older adults. Participants rate how true each statement is for them on a four-point scale, with responses ranging from 'always' to 'rarely or never'. The minimum score is 10 and the maximum score (with a high score indicating higher levels of anxiety) is 40. Given that the SAST has only recently been developed there are few studies that have reported using it and no validation data other than that provided by the authors (Sinoff et a, 1999). In order to validate the SAST the authors asked 150 older adults to complete the SAST and then conducted a structured interview (ADIS-IV; DiNardo, 1993) and a psychiatric evaluation. They concluded that the SAST is valid in detecting anxiety in older adults, and will do so even when the individual is comorbidly presenting with depression (appendix 15).

Geriatric Depression Scale (GDS; Yesavage et al 1983). The GDS is a measure developed specifically to assess symptoms of depression in older adults. The measure is particularly appropriate for an older adult population as it omits items assessing somatic symptoms and is answered using a yes/no format e.g. 'Do you feel that your life is empty?', 'Do you think it is wonderful to be alive now?', 'Are you afraid that something bad is going to happen?'. Psychometric data for the 30-item and more recent 15-item version of the scale suggest that the GDS is a useful

screening tool for older adults with depression (Stiles & McGarrahan, 1998; Snyder et al, 2000). Two studies to date have also investigated the use of the GDS in detecting depression with medically ill older adults and found it to be adequate and recommend its utilisation (Neal & Baldwin, 1994; Shah et al, 1997). The 15-item GDS will be used in the present study. The scores range from 0-15, with a higher score indicating increased levels of depression. This measure has been included to help assess the specificity of the anxiety measures (appendix 16).

Results

The main aim of this study was to evaluate the psychometric properties of self-report anxiety questionnaires, when used with older adults who have a co-existing medical illness. Specifically, information on reliability and validity of these instruments was required.

In order to answer some of the questions raised by this study the participants were split into different groups for different analyses. Initially, the participants were split into those who had their CABG surgery within eight weeks of being interviewed (Group A) and those who had surgery more than eight weeks prior to being interviewed (Group B). In different analyses they were split into those participants with and those participants without an anxiety diagnoses (based on categorisation after administration of the SCID-IV; Spitzer et al, 1988). In addition, subsequent analyses split the group into those participants with a depression diagnoses and those participants without a depression diagnoses (again, these categorisations were based on administration of the SCID-IV; Spitzer et al, 1988).

The first and primary objective of the study was to provide information on the sensitivity of participant completed self-report questionnaires in assessing anxiety in older adults who have a co-existing medical illness. In essence, were the scales able to discriminant between those who were diagnosed as having an anxiety disorder and those who were categorised as not having an anxiety disorder. This was calculated and compared by independent samples *t*-test. Linked to this, the information

gathered was analysed to determine which of the self-report measure related most highly to the clinician rating of anxiety (diagnosed using the SCID-IV; Spitzer et al, 1988). This was calculated by stepwise backward regression.

The third objective of the study was to examine the specificity of participant completed self-report questionnaires with older adults who have a co-existing depressive and medical illness. In essence, to determine whether the scales were able to differentiate between anxiety and depression, given the significant amount of overlap typically associated with measures of these constructs (Mineka, Watson & Clark, 1998; Stanley et al, 2001)

Finally, the test-retest reliability of five self-report measures of anxiety and depression when used with older adults with a medical illness was also examined. The test-retest reliability of the self-report measures was assessed by means of the Pearson's coefficient calculation, based on the score given by each rater.

To provide information on these aims the results discuss descriptive data, specificity, sensitivity and test-retest reliability data. The data were analysed using SPSS (version 10). A p-value of <0.05 was considered statistically significant.

Descriptive Analyses

Seventeen participants agreed to take part in this study. Fourteen of these participants were male, the remaining three being female. Due to the recruitment difficulties documented in the Methodology section, these 17 participants differed in at least one significant manner: the time between them having the CABG surgery and them participating in this study. Eight were recruited within eight weeks of their CABG surgery (with a mean time of 6.5 weeks since their surgery; range from six weeks to eight weeks post-surgery). The other nine participants were recruited within six months of their CABG surgery (with a mean time of 22.9 weeks since their surgery; range from 20-24 weeks post-surgery). Further demographic information for male participants is provided in table one and for female participants in table two, below.

Table 1: Male demographic information (N=14)

Length of time since surgery	Number of participants	Living with partner	Routine CABG	No complications after CABG	Mean MMSE score
Group A	8	7	4	6	29
Group B	6	6	6	4	28.8

(Group A: those who had CABG surgery within past eight weeks; Group B: those who had CABG surgery more than eight weeks ago; MMSE: Mini-Mental State Examination, Folstein et al, 1975)

Table 2: Female demographic information (N=3)

Length of time since surgery	Number of participants	Living with partner	Routine CABG	No complications after CABG	Mean MMSE score
Group A	0	–	–	–	–
Group B	3	1	2	2	28

(Group A: those who had CABG surgery within past eight weeks; Group B: those who had CABG surgery more than eight weeks ago; MMSE: Mini-Mental State Examination, Folstein et al, 1975)

Although it would be normal practice to conduct analyses aimed at identifying potential differences between participants of each gender and participants who had their operation within the past eight weeks and outwith the past eight weeks, the small number of participants in this study limit the statistical analyses and comparisons that can be accurately be carried out. Therefore, the data set was not statistically examined for any demographic differences resulting from gender differences. It was assumed that there were no differences and the data from both males and females combined. Differences between the recruitment groups (Group A and Group B) were explored further, although again, not statistically.

The results in the tables above indicate that the majority of participants in this study were living with their partner (total number of participants living with partner was 14).

Additionally, the majority had undergone routine CABG surgery, meaning that they were placed on a waiting list for the operation and were aware that they were scheduled to have the operation for at least one month in advance of the operation being carried out (the total having routine CABG surgery was 12). The remaining five participants were unaware prior to their admission to hospital that they were going to have, or indeed needed, CABG surgery. If the number of participants in this study had been greater potential differences in anxiety levels between these two groups may have been usefully examined.

The majority of the participants had no complications after surgery (this information was gathered from the participant individually and was subsequent to the medical consultant considering whether any post-surgery complications precluded their participation in this study) (total number of self-reported no complications was 12). The other five participants reported that they did experience complications following surgery, but all were well enough to be at home within three weeks of their operation. Again, if the number of participants in this study had been greater potential differences in anxiety levels between these two groups may have been usefully examined.

No participant scored less than 24 on the MMSE (Folstein et al, 1975), meaning that no participant was excluded for cognitive difficulties (the overall mean score for all participants on the MMSE was 28.7). (see methodology for further details). Interestingly, although it is documented (Kilo, 2001) that cognitive difficulties may exist post-surgery, particularly within the first six weeks and up to six months

following CABG surgery, there was no difference between the mean score of participants interviewed up to eight weeks post surgery (Group A) and those interviewed approximately five to six months post surgery (Group B). It may be that there were fewer participants with cognitive difficulties in this study than is true for the whole CABG population due to the inclusion of fewer participants with surgical complications and poor health (as these participants were screened out at the recruitment stage of this study as they were deemed of insufficient health to participate).

In addition to information regarding their CABG surgery, participants were also asked to provide information on their attitudes and opinions with regard to the quality of life and satisfaction with their health. Participants were asked to make a global assessment (answering only two individual questions with a 5-item response scale). The responses, split to provide information on those who had surgery within the past six to eight weeks (Group A) and those who had surgery more than eight weeks ago (Group B), are detailed in table three below.

Table 3: Participant report of global assessment of satisfaction with life and description of quality of life

Quality of life question responses	Number of responses Group A (n=8)	Number of responses Group B (n=9)	Satisfaction with health question responses	Number of responses Group A (n=8)	Number of responses Group B (n=9)
Very poor	0	0	**Very dissatisfied**	0	0
Poor	1 (12.5%)	1 (11.1%)	**Dissatisfied**	0	0
Neither good or poor	1 (12.5%)	1 (11.1%)	**Neither satisfied or dissatisfied**	3 (37.5%)	1 (11.1%)
Good	4 (50%)	4 (44.4%)	**Satisfied**	4 (50%)	7 (77.8%)
Very good	2 (25%)	3 (33.3%)	**Very satisfied**	1 (12.5%)	1 (11.1%)

The results provided in the table above suggest that there is little difference in the responses to the quality of life question from the group of participants who were operated on within the past eight weeks and those who had surgery within the past five or six months. Although the small number of participants precludes meaningful statistical analyses, it would appear from responses to the satisfaction with health question that those whose surgery occurred further away from the date of the interview were more satisfied with their life. This may reflect the fact that Group A (those who were interviewed within between six and eight weeks after their operation) were still actively recovering from their surgery and many were yet to feel the anticipated benefits of the surgery.

When the participants are treated as a whole, the results indicate that, although they were still a maximum of six months post-surgery following a major operation, the vast majority of respondents felt that their quality of life was either good or very good. Similarly, the vast majority were able to report that they were either satisfied or very satisfied with their health.

Although the majority of participants reported positively with regard to the quality of their lives and their satisfaction with their health, a number were diagnosed with a DSM-IV (APA, 2000) diagnoses following administration of the SCID (Spitzer et al, 1988). Further details are provided in table four below.

Table 4: Number of participants meeting DSM-IV Diagnoses

	No diagnoses met	%	**Anxiety due to GMC**	%	**GAD**	%	**Mood disorder/ GAD**	%	**Mixed anxiety /depression**	%
Group A	5	62.5	1	12.5	0	-	1	12.5	1	12.5
Group B	5	55.6	1	11.1	1	11.1	0	-	2	22.2
Total	10	-	2	-	1	-	1	-	3	-

(Group A: those who had CABG surgery within past eight weeks; Group B: those who had CABG surgery more than eight weeks ago
No diagnoses met: participant did not meet any DSM-IV (APA, 2000) disorder criteria assessed; anxiety due to GMC: diagnosed as having anxiety due to a general medical condition; GAD: diagnosed as having generalised anxiety disorder; mood disorder: diagnosed as having a depressive mood disorder and generalised anxiety disorder; mixed anxiety/depression: diagnosed as having mixed anxiety and depression)

As can be seen in the table above, there were seven participants diagnosed with some form of an anxiety disorder. Ten participants in the study did not meet any diagnostic criteria for a mood or anxiety disorder.

Given the small number of participants in this study and the lack of observable differences between the groups, the data from those who had their surgery within eight weeks of being interviewed and those who had their surgery more than eight weights before being interviewed will be collapsed together. The group will be split into those diagnosed with an anxiety disorder and those without an anxiety disorder.

Descriptive and frequency analyses were carried out on the data of the undivided sample. The data was normally distributed. Mean scores for each of the self-report questionnaires, for the undivided sample, are listed in table five below.

Table 5: Means scores on self-report questionnaires

	BAI	PSWQ	HADS (total)	HADS (anxiety)	HADS (depression)	SAST	GDS
Mean	10.1	38.5	10.8	5.4	5.4	17.9	4.7
SD	7.7	7.2	7.6	3.9	4.5	5.0	4.0
Range	0-21	27-55	1-26	0-16	0-16	11-27	0-13

(Beck Anxiety Inventory: Beck et al, 1998; Penn State Worry Questionnaire: Meyer et al, 1990; Hospital Anxiety and Depression Scale: Zigmond & Snaith, 1983; Short Anxiety Screening Test: Sinoff et al, 1999; Geriatric Depression Scale: Yesavage et al, 1983)

Analyses of study objectives

Objective 1: To examine the sensitivity of participant completed self-report questionnaires in assessing anxiety in older adults who have a co-existing medical illness

The central research question of this study was whether the five mental health scales could differentiate between an anxious and non-anxious group of older persons who had a co-existing medical illness. This was calculated by a two tailed, independent samples *t*-test. Results are displayed in table six below.

Table 6: T-test results comparing scores on self-report measures for a group of anxious participants and a group of non-anxious participants.

Measure	Diagnostic group	Means	Standard Deviation	t value	p
BAI	Anxious Non-anxious	13.0 8.1	10.05 5.24	1.32	NS
PSWQ	Anxious Non-anxious	40.14 37.30	9.97 4.72	.79	NS
HADS (total)	Anxious Non-anxious	14.14 8.4	8.71 6.17	1.60	NS
HADS (anxiety)	Anxious Non-anxious	7.29 4.10	4.64 2.77	1.78	NS
HADS (depression)	Anxious Non-anxious	6.86 4.30	5.21 3.86	1.17	NS
SAST	Anxious Non-anxious	20.43 15.60	4.35 4.58	2.18	**.045**
GDS	Anxious Non-anxious	6.86 3.20	3.58 3.68	2.04	NS

(Beck Anxiety Inventory: Beck et al, 1998; Penn State Worry Questionnaire: Meyer et al, 1990; Hospital Anxiety and Depression Scale: Zigmond & Snaith, 1983; Short Anxiety Screening Test: Sinoff et al, 1999; Geriatric Depression Scale: Yesavage et al, 1983))

As can be seen from the table above the mean scores for all the self-report anxiety and depression questionnaires are higher for the anxious sample. The groups diagnosed as anxious or not anxious using the SCID-IV (Spitzer et al, 1988), scored significantly differently on the SAST anxiety scale (t=2.18, p<.05, df=15, 2 tailed). The mean difference between the anxious and non-anxious group with respect to scores on the SAST was 4.83. The anxious and non-anxious groups did not score significantly differently on any of the other self-report measures administered.

Due to the small sample size non-parametric tests (Mann Whitney U) were also conducted using the same groups and measures. Equivalent results were found, with the scores on the SAST showing significant differences between the anxious and non-anxious groups (U=15; p<.05). Again, the test did not find any difference for any other self-report measure between the anxious and non-anxious group.

Caution must be exercised in interpretation of these results due to the small size of the sample. Another point to consider when interpreting these results is the fact that, when multiple t-tests are done at .05 level of significance, there is a 1 in 20 chance that a significant result would occur anyway.

However, they indicate that, amongst the self-report questionnaires administered to the older adults with a medical illness in this study, only the SAST demonstrated sensitivity in differentiating between those who were diagnosed as anxious and those who were not.

Objective 2: To determine which self-report measure related most highly with the clinician rating of anxiety

Although not strictly permissible due to the small sample size, a stepwise backward regression was conducted, in order to determine which of the self-report measures related most highly to the clinician rating of anxiety. Results are shown in table seven below.

Table 7: Stepwise backward regression to determine which of the self-report measures related most highly to the clinician rating of anxiety.

Independent Variables entered	Adjusted R^2	Sum of squares	Degrees of freedom	F statistic	Significance level
BAI PSWQ HADS (anxiety) HADS (depression) SAST GDS	.018	1.59	6, 10	1.05	NS
PSWQ HADS (anxiety) HADS (depression) SAST GDS	.077	1.50	5, 11	1.27	NS
PSWQ HADS (anxiety) HADS (depression) SAST	.142	1.47	4, 12	1.66	NS
PSWQ HADS (anxiety) SAST	.130	1.20	3, 13	1.79	NS
HADS (anxiety) SAST	.155	1.07	2, 14	2.47	NS
SAST	.191	0.99	1, 15	4.77	**.045**

(Beck Anxiety Inventory: Beck et al, 1998; Penn State Worry Questionnaire: Meyer et al, 1990; Hospital Anxiety and Depression Scale: Zigmond & Snaith, 1983; Short Anxiety Screening Test: Sinoff et al, 1999; Geriatric Depression Scale: Yesavage et al, 1983)

Although a total of six models were entered into the regression analysis, only the participant scores on the SAST significantly predicted anxiety status (adjusted R^2=.19, F=4.77, df 1,15, p<.05) as diagnosed following the administration of the SCID-IV (Spitzer et al, 1988). The results on the other scales were not significantly significant. Again, although caution is warranted, these results confirm those found in table six above, suggesting that the SAST would be the self-report measure (if choosing from the self-report measures considered in this study) most usefully administered to assess anxiety in older adults who have a co-existing medical illness, in the absence of a clinical interview.

Objective 3: To examine the specificity of self-report questionnaires with older adults who have a co-existing depressive and medical illness

One of the main research questions examined in this study was whether the anxiety self-report measure scales could reliably discriminate between those older persons who had an anxiety diagnoses and those who had a depressive disorder. In order to address this question, the group was split into those with a DSM-IV (APA, 2000) mood disorder diagnoses and those with no mood disorder diagnoses. This resulted in four participants being classified as having a depressive disorder and 13 participants being classified as having no depressive disorder. This difference in mean scores on the self-report questionnaires was calculated by a two tailed, independent samples *t*-test. Results are displayed in table eight below.

Table 8: T-test results comparing scores on self-report measures for a group of depressed participants and a group of non-depressed participants.

Measure	Diagnostic group	Means	Standard Deviation	t value	p
BAI	Non- depressed Depressed	8.23 16.25	5.71 11.00	-1.98	NS
PSWQ	Non- depressed Depressed	36.92 43.50	5.89 9.68	-1.69	NS
HADS (total)	Non- depressed Depressed	7.85 20.25	5.55 5.56	-3.91	.001
HADS (anxiety)	Non- depressed Depressed	4.00 10.00	2.48 4.32	-3.56	.003
HADS (depression)	Non- depressed Depressed	3.85 10.25	3.48 4.19	-3.08	.008
SAST	Non- depressed Depressed	16.38 21.50	4.48 5.07	-1.94	NS
GDS	Non- depressed Depressed	3.62 8.25	3.78 2.36	-2.29	.037

(Beck Anxiety Inventory: Beck et al, 1998; Penn State Worry Questionnaire: Meyer et al, 1990; Hospital Anxiety and Depression Scale: Zigmond & Snaith, 1983; Short Anxiety Screening Test: Sinoff et al, 1999; Geriatric Depression Scale: Yesavage et al, 1983)

All of the mean scores on the anxiety self-report questionnaires in the depressed group are elevated. However, the only statistically significant differences in self-report anxiety scores between the depressed and non-depressed group are on the HADS (total), HADS (anxiety), HADS (depression) and GDS. The statistical difference on the HADS (depression) and the GDS are as would be expected (you would expected higher depression scores on a questionnaire designed to assess depression with the group diagnosed as having a depressive disorder).

The statistical difference on the HADS (anxiety subscale) was not expected and calls into question the specificity of the HADS (anxiety subscale) for a medically compromised population. This is a particularly interesting result as this is the scale that would probably be used as the instrument of choice clinically. This result would also suggest that the remaining questionnaires (SAST, PSWQ & BAI) provide good specificity for an older adult population with a medical illness and co-existing depressive disorder. However, as there were only four participants in the depressed groups the means for this group are unstable and the results should be treated with extreme caution.

Again, in response to the small sample size, the non-parametric Mann-Whitney *U* test was conducted for the same group and measures. Similar results were found to those reported in table eight above.

Objective 4: To examine the test-retest reliability of five self-report measures of anxiety and depression when completed by older adults with a medical illness

Determining test-retest reliability is essential if measures are to be used for evaluating treatment progress. As the test-rest questionnaires were sent out to participants two weeks after the initial interview and were required to be posted back, there are a number of missing data sets in this analyses (14 of the participants returned their follow-up questionnaires, a response rate of 82.4 percent). The missing values of the remaining three participants were replaced by the scale mean. The test-retest reliability was assessed using Pearson *r* correlation, 2-tailed.

Results for the whole group of participants are discussed in table nine below.

Table 9: Test-retest reliability correlations for the whole group of participants (n=17)

	Mean score Time 1	Mean score Time 2	*r*	Significance level
BAI	10.12	6.18	.352	NS
PSWQ	38.47	34.49	-.030	NS
HADS (total)	10.76	7.99	.218	NS
HADS (anxiety)	5.41	4.26	.307	NS
HADS (depression)	5.35	3.73	.107	NS
SAST	17.89	16.37	-.059	NS
GDS	4.71	2.66	.209	NS

(Beck Anxiety Inventory: Beck et al, 1998; Penn State Worry Questionnaire: Meyer et al, 1990; Hospital Anxiety and Depression Scale: Zigmond & Snaith, 1983; Short Anxiety Screening Test: Sinoff et al, 1999; Geriatric Depression Scale: Yesavage et al, 1983)

As can be seen in table nine above, the self-report measures did not demonstrate test-re-test reliability for this population. This may be due to the small sample size and the result must therefore be interpreted cautiously. Similar statistical analyses was conducted splitting the group into those with and those without an anxiety diagnoses (tables 10, 11; see appendix 17). Similar results were found to those described above, although in the non-anxiety diagnoses group, the test-retest correlation for HADS (anxiety) was significant. Non-parametric Spearman correlations were also carried out and results were similar to those described above.

Discussion

One of the biggest challenges facing our National Health Service is the growing number of older adults in the population and the associated psychological and physical health difficulties they are likely to face (Power et al, 2000). There are many issues that need to be researched and considered in greater detail in order to provide a good quality service to the ageing population. This study is concerned with the assessment of anxiety in older adults. Although prevalence rates should be interpreted with caution, it is probable that anxiety disorders constitute the biggest mental health problem facing our ageing population (Blazer, 1997).

The assessment of anxiety in older adults is complex and the factors that need to be taken into account when assessing anxiety in older adults have been outlined above. They include possible different psychopathologies of anxiety in older and younger adults (Beck et al, 1996; Stanley & Averill, 1999), comorbidity with depression and other possible psychiatric disorders (Cloninger, 1990; Flint, 1994), somatic presentations (Lasoki, 1986; Oxman et al, 1997) and comorbidity with medical conditions (Blazer, 1997; Oxman et al, 1997).

A review of the limited research on current assessment methods has been critically examined (e.g. Beck et al, 1995; Fuentes & Cox, 2000; Kabacoff et al, 1997; Stanley & Beck, 2000). However, the implications from, and the generalisability of, the current research is limited by small and unrepresentative sample sizes and methodological issues (Stanley & Beck, 2000). It has been concluded that there is a

great need for further research into assessment methods with older adults. Not withstanding current research, most self-report measures used with older adults are designed for younger populations, and clinicians risk an invalid assessment, diagnosis and possible treatment approach when using measures for which the psychometric properties are still in question for older adults.

The main aim of this study was to gather psychometric information, specifically information relating to specificity and sensitivity, about self-report anxiety measures when used with older adults who were diagnosed as having a co-existing medical illness. Although the need for such research is often alluded to in the literature (e.g. Beck et al, 1995; Stanley & Beck, 2000) very few research studies have been specifically designed to examine this issue.

Participants to this study had all undergone cardiac artery bypass graft within six months of their participation. As mentioned in the introduction, the effects of CABG surgery can produce anxiety-like symptoms (Ben-Noun, 1999; Duits et al, 1998). In addition, the experience of such a major operation can also cause psychological reactions such as anxiety and worry. Although such complex relationships can result in great difficulty making differential diagnoses, given the vast number of older adults who suffer from medical illness (Woods & Bain, 2001), accurate assessment of the presentation of anxiety in medically compromised older adults is essential.

Discussion of results

Discussion of descriptive analyses

As mentioned previously, the number of people participating in this study was less than had been anticipated due to recruitment difficulties. Such a small sample size precluded certain analyses being carried out. For example, although it has been reported in the literature that females are more likely to experience anxiety disorders than males (Reiger et al, 1988), examination of gender differences could not be carried out on this sample.

Additionally, although the participants could be split into approximately equal groups of those who had their CABG surgery within eight weeks of being interviewed and those who had their CABG surgery more than eight weeks previous to being interviewed, due to small sample size no statistical analyses could be carried out to examine potential group differences. It might be hypothesised that those who had their surgery approximately six months ago would have gained more benefit from the surgery and therefore have a subsequent reduction in psychological distress.

Another potential area of exploration could possibly have examined group differences between those participants who reported that they had undergone 'routine' CABG surgery and those participants who reported that they were 'emergency' patients. For those in the routine group, they all reported experiencing some physical distress in the months prior to their surgery and it can be assumed that,

although possibility anxious about the actual surgery, they were looking forward to symptom reduction following their CABG surgery. With reference to the 'emergency' patients, many do not experience symptoms prior to being told they need surgery and it is possible that they therefore do not perceive the same tangible benefits from the surgery. Further exploration of these issues and the associated anxiety symptoms and disorders is necessary and will lead to a greater understanding of the psychological issues associated with CABG surgery. However, this was not possible in the current study.

The primary aim of this study was to provide information on the specificity and sensitivity of self-report measures used with older adults with a medical illness. Nonetheless, it is interesting to note that, when asked to provide a global assessment of their quality of life, the majority of respondents to this study reported that their quality of life was 'good' or 'very good'. Given that they had all recently undergone major surgery such responses may confirm the view that older adults cope very well with the difficulties associated with their age and continue to enjoy life. However, it should also be noted that participants volunteered to participate in this study and there may have been a response bias, with the least satisfied with their quality of life opting not to participate. The gathering of further information on the difference that the CABG surgery had made to their quality of life would possibly have provided valuable insight into these findings.

Similarly, responses to the question 'How satisfied are you with your health at the moment' indicated a high level of satisfaction for study participants. Such responses again refute the traditional view of older age, again suggesting that the majority cope well with the limitations of older age. However, as above, it may also reflect the fact that many of the participants were beginning to experience less health difficulties than they experienced prior to their operation. Future pre and post surgery ratings of the same measures is likely to provide useful information in further studies.

Given that seven of the older adults were diagnosed with a DSM-IV (APA, 2000) anxiety disorder, the above results may reflect an unawareness of the psychological distress that they were currently experiencing or an unwillingness to report it. Of course, it may also be that the DSM-IV classification system is being called into question with these results. However, the rate of psychological distress following CABG surgery found in this study, is less than the rate currently reported in the literature (Oxman et al, 1994). Once again however, it should also be remembered that previous studies measuring anxiety and depression rates following surgery often utilised self-report measures that were not validated for the older adult population that they were administering them to, calling into question any results and conclusions.

Clinical implications of descriptive analyses

The psychological effects of physical illness and surgery in older adults is an issue that continues to require further investigation and research. This area of research

will be aided if assessment measures that can accurately assess anxiety in this section of the population can be developed and validated.

It reliable tools were developed, it is possible that extremely useful predictive work could be undertaken. Such work would allow those most at risk of developing anxiety and/or other psychiatric disorders following their surgery to be more clearly defined prior to their surgery (some work has been done looking at how pre-operative depression can be predictive of post-operative depression and recovery times, Timberlake et al, 1997, but little work has yet been reported addressing the same issues with regard to anxiety disorders). Appropriate intervention work could then be offered at the earliest possible stage, limiting the damaging effect that psychiatric comorbidity has been found to have on recovery rates and mortality (Duits et al, 1997; Patrick et al, 2001; Pennix et al, 2001). As Ormel et al (1997) suggests, it is likely that it is not the nature of the medical condition that determines psychological distress, but instead the severity of the disability and loss of psychological resources associated with the condition on the one hand and the psychological characteristics on the other.

Discussion of study objectives one and two

The first study objective was to examine the sensitivity of participant completed self-report questionnaires in assessing anxiety in older adults who have a co-existing medical illness. The scores on all of the self-report questionnaires that were administered were higher for the group that were diagnosed as being anxious than for

the group diagnosed as having no anxiety disorder. It would be interesting to compare the mean scores with the normative values that have reported for the self-report questionnaires with other older adults. However, as was discussed in the introduction, so few of these questionnaires have been validated for older adults or had normative values investigated for older adults that such a comparison is not possible (Morin et al, 1999).

Although the mean scores were all elevated for the anxiety group the only statistically significant result was for the Short Anxiety Screening Test (Sinoff et al, 1999). The anxious and non-anxious groups did not score significantly differently on any of the other self-report measures administered. This finding suggests that, although all anxiety self-report questionnaires are appropriately measuring anxiety to some extent, only the SAST demonstrated sensitivity in differentiating between older adults who had a medical illness who were suffering from an anxiety disorder and those who were not.

The second study objective was to determine which self-report measure related most highly with the clinician rating of anxiety. This obviously linked to objective one above, and a stepwise backwards regression confirmed that the SAST was the self-report questionnaire that best predicted experimenter diagnoses of the presence or absence of an anxiety disorder. This result suggests that, if choosing from the self-report measures administered during the course of this study, the SAST would be the only questionnaire to distinguish between an anxious and non-anxious group of medically compromised older adults. However, a significant amount of variance in

the regression remains to be explained and further investigations are needed to assess which other variables might lead to an improvement in the proportion of variance explained. Hopko et al (2000) suggest that identifying and including variables assessed by ADIS-IV (DiNardo et al, 1993) interviewers might be a useful avenue to explore. Similarly, consideration of SCID-IV (Spitzer et al, 1988) may also produce interesting results.

Clinical implications of study objectives one and two

Before any interpretation of the results discussed so far can be undertaken, it is important to stress that the small sample size severely restricts and casts into question any conclusions that can be made from this study. Further replication, with a larger and more representative sample size, would be needed before any firm conclusions could be made. Despite this limitation, the present study can still have potentially meaningful interpretations and implications.

The main finding is that the SAST was the only questionnaire to statistically demonstrate sensitivity in measuring anxiety in medically compromised older adults. However, the authors of the SAST (Sinoff et al, 1999) suggest a cut off score indicative of anxiety of 24. The mean score for the anxious group in this sample was only 20. Therefore, there is a need to look at the normative values for older adults with a medical illness in more detail, as these findings suggest that separate norms may be appropriate for medically compromised older adults. It may be that the older adults in this sample were under reporting many anxiety symptoms as they were

simply attributing them to their medical illness (which has led to an under reporting of anxiety symptoms) but such hypotheses and considerations need to be investigated in more detail before the SAST can be recommended for use with this population.

Results such as those above demonstrate the importance of understanding more about the presentation of anxiety in older adults with a medical illness and their reporting of this anxiety. From the limited conclusions that can be drawn from this study, it does appear that inclusion of somatic items in self-report questionnaires for medically compromised older adults is important. The SAST, specifically developed for older adults, includes somatic complaints (which are often the manifestation of anxiety in older adults) and was the only self-report questionnaire administered in this study to demonstrate sensitivity. In contrast, the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) was specifically developed as a screening instrument for anxiety and depression in medical outpatients. The authors state that to avoid the confounding effect of symptoms of physical illness the HADS excludes somatic items. In this study, the HADS was not found to discriminate between older adults with a medical illness who were and who were not diagnosed as anxious (based on a clinical interview using the SCID-IV; Spitzer et al, 1988).

Given the lack of sensitivity found for the majority of these anxiety self-report questionnaires, it would be interesting to investigate the factor structure of the questionnaires with the participants who took part in this study. Other studies conducted have examined the factor structure in their studied population and found interesting results, with different populations demonstrating different factor

structures for the self-report measures in question (Flint & Rifat, 2002; Gillis et al, 1995; Morin, 1999). It would be interesting, with a larger sample, to investigate the internal consistency of the scales and identify any clusters of questions that are especially useful in identifying anxiety in older adults with a medical illness (whether it be somatic or cognitive type questions).

In conclusion, the majority of the anxiety self-report questionnaires examined in this study failed to demonstrate sensitivity with regard to the presence of an anxiety disorder in a population of medically compromised older adults. The exception was the SAST, a relatively new and under-researched questionnaire, which shows promise but more research is needed to determine its utility. None of the questionnaires investigated could be recommended for use with older adults who have recently undergone a CABG surgery. The lack of sensitivity found also casts into doubt any findings that have been reported using these measures with older adults with a medical illness to date.

Discussion of study objective three

The third objective of this study was to examine the specificity of self-report questionnaires of older adults who have a co-existing depressive and medical illness. The literature is replete with examples of co-morbid presentations of anxiety and depression (for example, Cloninger, 1990; Fuentes & Cox, 2000; Jacoby & Bergmann, 1995; Reiger et al, 1988). There is also a high rate of medical co-morbidity in older adults (Ames et al, 1993; Haley, 1996; Shapiro et al, 1996) and

anxiety symptoms are frequently present in those with a medical illness (Cassem, 1990; Magni et al, 1988).

The group of participants were split into those diagnosed as having a depressive disorder and those diagnosed as having no depressive disorder. Interestingly, the mean scores on all of the anxiety self-report measures were elevated for the group diagnosed as having a depressive disorder, confirming an overlap between these two conditions. However, not all of these results were statistically different.

The results indicate that statistical differences between the depressed and non-depressed groups were found on the HAD (total), HAD (anxiety scale), HAD (depression scale) and GDS (Yesavage et al, 1993). The HAD (total) score is included for information purposes only, as the anxiety and depression subscales are rarely combined in clinical practice. The statistical differences on the HAD (depression scale) and the GDS, the self-report questionnaires included in this study specifically to address co-morbidity issues, confirm that these questionnaires were able to discriminate between the two groups. The statistically significant difference between the depressed and non-depressed group on the HAD (anxiety scale) calls this scale into question, suggesting that it does not adequately discriminate between anxiety and depression in medically compromised older adults. The non-significant results for the remaining questionnaires suggest that the scales were able to reliability discriminate between those medically compromised older people who had an anxiety diagnoses and those who had a depressive disorder.

Clinical implications of study objective three

The results found in this analysis are interesting as they call into question the HADS (anxiety scale), a questionnaire that is commonly and routinely used in hospitals with patients who are medically ill. Indeed, it can even be said that this questionnaire would be the questionnaire of choice for many clinicians. However, caution should be shown in interpreting these results due to the extremely small sample size of the group diagnosed as having a depressive disorder. Only four participants were diagnosed as having a depressive disorder and therefore the means for this group are extremely unstable. Nonetheless, further investigation of the psychometric properties of the HADS (anxiety scale) with medically compromised older adults is warranted. In fact, the HADS been criticised for use in geriatric medical inpatients by other authors (Davies et al, 1993).

The Penn State Worry Questionnaire (Meyer et al, 1990), the Beck Anxiety Inventory (Beck et al, 1988) and the SAST all demonstrated specificity with regard to older adults with a co-existing medical and depressive disorder. However, again due to the sample size, replication and extension of this result should be undertaken prior to any definitive conclusions regarding adequacy being made. It is perhaps worth pointing out that the SAST was developed specifically for the detection of anxiety in older adults, especially in the presence of depression (Sinoff et al, 1999). This result on the newly developed questionnaire supports the authors reliability and validity findings.

The overlap between anxiety and depression in this study suggests that any study examining anxiety or depression in medically compromised older adults would be wise to include self-report measures designed to examine both disorders. Further work on determining the psychometric properties of self-report measures will lead to a greater choice of measures that are confirmed as valid and reliable for that population. There is also a need for more research aimed at identifying clinical features that differentiate between anxiety and depression (Hopko et al, 2001), which, as well as leading to more appropriate treatment, will aid the development of adequate assessment tools.

Discussion of study objective four

The final objective of this study was to examine the test-retest reliability of five self-report measures of anxiety and depression when completed by older adults with a medical illness. Determining test-retest reliability is essential if measures are to be used for evaluating treatment progress. However, the results indicate that, in this study, none of the self-report measures administered demonstrated statistically significant test-retest reliability after an approximate interval of two weeks. Interestingly, the mean scores for all the questionnaires were lower on second completion that they were on first completion.

These results were unexpected, particularly given the short time span between the test and re-test administration (questionnaires were sent out to participants two weeks after the initial visit and, all that were returned, were returned within a week of the

participant receiving them). There are a number of possible explanations that may account for this result. Firstly, as has been discussed previously, the restricted sample size for this study may have influenced significance rates. In addition, some of the sample (23.5 percent) did not return their questionnaires and the scale mean score from the remaining participants were used in conducting analyses. Again, this may have affected the result. However, as the scores on second administration were all lower than they had been at time one, other explanations are possible. It may be that the clinical interview that took place had a therapeutic effect on general anxiety and depression symptoms, although this had not been the express intention of the experimenter. For those participants diagnosed as having any anxiety or depression symptoms, self-help manuals were given, with details of local helpful organisations provided. These may have been utilised by the participants, with beneficial effect. For the participants who were interviewed within eight weeks of having their CABG surgery, some may have started rehabilitation classes by the time they received their re-test questionnaires. Again, these classes may have produced immediate beneficial effects. Additionally, it may be that the participant's interviewed were anxious about the original interview and their scores were higher on the first completion of questionnaire. The different mode of administration of questionnaires (i.e. personal interview at time one and postal questionnaire at time two) may also have led to a reduction in reported anxiety scores. Of course, it may be that the participants were continuing to perceive benefits from their surgery and experience less of the recovery effects (such as sleeplessness, tiredness etc) and this influenced their scores on the re-test questionnaires.

Clinical implications of study objective four

The results suggest that the self-report measures administered in this study do not demonstrate test-retest reliability for older adults with a medical illness. However, concluding from that result that these questionnaires are not useful would be premature. As explained above, there are a number of possible explanations given for the result, particularly with respect to the lower mean scores on the re-test questionnaires. A more thorough investigation, charting recovery from operation and controlling therapeutic variables would provide valuable insight into the utility of these questionnaires for medically compromised older adults. These results highlight the complexity of assessing anxiety in older adults with a medical illness. They highlight the need for more investigation of the presentation of anxiety in older adults and the need for psychometric information relating specifically to this population.

Overall clinical implications

As mentioned previously, the results discussed should be interpreted with caution due to the restricted sample in this study.

Generally, the anxiety self-report measures that were assessed in this study were not found to be psychometrically valid with older adults who had recently undergone CABG surgery. The exception to this is the SAST, which was found to demonstrate both sensitivity and specificity.

There are a number of possible explanations as to why the majority of the questionnaires were not found to be psychometrically sound. It may be that, as mentioned in the introduction, older adults have different psychopathologies to younger adults with reference to anxiety presentation. Therefore, it may be that the content of the majority of the self-report anxiety questionnaires assessed in this study did not reflect the experience of anxiety in older adults. More research is needed to investigate this area generally. More specifically, the results may be due to the different presentation in older adults with a medical illness. Although there is still little information on the presentation of anxiety in older adults without a medical illness (Kogan et al, 2000) there is even less information available on the presentation of anxiety in older adults with a medical illness.

As mentioned in the introduction, there is a tendency for older adults to report more somatic concerns than younger adults (Oxman et al, 1997). It has been suggested that this is likely to cause difficulties with reference to norms and measures developed with a younger population. Since most anxiety scales are heavily loaded with somatic items, it has been suggested that a high proportion of non-anxious older adults may fall within the range that is used to identify clinical cases of younger populations (Morin et al, 1999). The low number of studies that have investigated normative values for older adults precludes examination of normative scores and this remains an avenue in need of further exploration. However, it is worth noting that, in this study, it was the questionnaire that was specifically designed to include somatic complaints (SAST) that demonstrated the best predictive ability of clinician

diagnoses of anxiety. More information of the overlap between medical illness and the reporting of somatic complaints is needed.

With the exception of the HADS (anxiety scale) the self-report measures demonstrated adequate specificity. However, the inflated scores on anxiety questionnaires for the depressed group suggests that both disorders should be assessed in older adults with a medical illness.

To conclude, although the SAST shows promise as a self-report questionnaire that can be utilised to accurately assess anxiety disorders in medically compromised older adults, further research (particularly with reference to norms) is needed. The BAI, PSWQ and the HADS (anxiety scale) would not be recommended for use with this population on the basis of results found in this study. Furthermore, the conclusions of any research studies that used these measures in this population are called into question. The need for assessment tools which can be utilised to differentially diagnose anxiety and depression in medically compromised older adults remains. In the meantime, in order to accurately assess anxiety in older adults with a medical illness, a clinician-led diagnoses, with accurate history taking (in an attempt to examine the temporal relationship of symptomatology with the onset of medical illness) and physical examination is recommended (Blazer, 1997).

Methodological considerations

As has been mentioned throughout this discussion, the number of participants recruited to the study constitutes the main methodological consideration. The low recruitment rate has inevitably led to an unrepresentative sample (i.e. unequal numbers of male and female participants) and precluded certain analyses being carried out.

The recruitment difficulties encountered during this study were unpredictable and outwith the control of the experimenter. As mentioned in the methodology, based on previous years data it had been estimated that approximately 100 older adults would be eligible to participate in this study. However, due to the outbreak of methicillin-resistant staphylococcus aureus (MRSA) and the subsequent closure of the Lothian unit conducting the CABG surgery, the pool of potential participants was greatly reduced. The response rate for those recruited within eight weeks of their surgery was 38 percent, indicating that if the original study design had progressed, it is estimated that the number of participants would have satisfied the requirements for statistical power. This response rate may also have been adversely affected as some of participants were recruited after the MRSA outbreak. Increased levels of anxiety and uncertainty in those who had spent some time awaiting their surgery, or dissatisfaction with the hospital, may have dissuaded them from participating. The percentage recruited via method B (those who were recruited approximately five-six months post operatively) was much lower (17.3 percent), indicating even less willingness to participate.

Difficulties in recruiting older adults to research studies has recently begun to be addressed in the literature (Arean & Gallagher-Thomson, 1996; Glasgow & Hampson, 1995; Harris & Dyson, 2001; High & Doole, 1995; 1996; Smeet et al, 2001). The published papers report on the difficulties found in recruiting older adults and the strategies that have been helpful in different studies. Harris & Dyson (2001) found that the initial approach to the participant was vital. They report that the participant needed to be orientated or prepared to receive information from the researcher prior to the actual explanation of the research. In this study, Lothian Research Ethics Committee insisted that potential participants be contacted only by a letter from their consultant detailing the study. As many of the participants were unlikely to have ever met their consultant this design effectively constituted 'cold calling' and may have adversely affected both response rates and limited the participants opportunity to make an informed choice. In a recent study, Smeet et al (2001) compared three different recruitment methods (postal questionnaires, interview by layperson or interview by nurse) and found that older adults responded best to the postal questionnaires. They concluded that possible difficulties in travelling to their interview sites may have influence the results but also thought it possible that older adults actually preferred postal questionnaires rather than a face-to-face interview. In this study, travel difficulties were excluded as the interviewer offered to see the participants in their own home. However, many may have felt that this was intrusive and again, this may have affected the recruitment rate (although potential participants were also told they could be interviewed at the hospital if that was more convenient for them).

As Harris & Dyson (2001) note, few published research papers describe recruitment of strategies used for recruiting older adults in practicable ways. Given the growing number of older adults and the possible health difficulties they face, strategies and techniques that provide the older adults with the maximum opportunity to make an informed choice with regard to participation are necessary. There is a clear need for further research on the effects of different recruitment procedures on participant characteristics and representativeness of participants.

Given that the people that did participate in this study did so voluntarily, there may also have been issues associated with sample bias (van Lankveld et al, 1999). As mentioned above, recruitment strategies affect the characteristics of the recruitment sample. It may that participants to this study were more aware of psychological health issues or more interested in health issues. It is possible that they were more likely to have suffered from psychological distress earlier in life than non-responders. Unless non-responders are followed up and demographic differences examined these points cannot be clarified. Combined with the lack of representativeness in terms of gender, such considerations mean that the results of this study are therefore not generalisable.

Another potential methodological flaw is the fact that the same interviewer who carried out the SCID-IV interview (Spitzer, 1988) administered the self-report questionnaires. If the participant required any practical assistance completing the questionnaires this was offered. Assistance was only given by reading the questions

and possible responses and no help was given on question interpretation or the choice of particular responses. However, the participant may have felt obliged to answer the self-report questionnaires in a certain manner depending on how they had answered questions during the semi-structured interview.

Also, although all of the participants had recently undergone CABG surgery, little was known about other medical difficulties they were experiencing. Although they were asked to provide information on their current health there might have been other co-morbid presentations that they did not consider. These might have affected the results. Although it is not always practical to ask participants to a research study to undergo a medical, it may be wise to request access to medical notes in studies looking specifically at older adults with a medical illness.

Another drawback of this descriptive study is the lack of a clinical comparison group. It would perhaps have been useful to administer the same questionnaires in the same fashion to a group with no co-existing medical illness and no co-existing depressive disorder. Although this would provide quality information, the group that we did consider are the group most likely to present at clinics and, in this study, it was hoped that the research undertaken would be clinically relevant.

Directions for future research

As there is still only a limited amount of research examining anxiety in older adults there is much work still to be done. Possible directions for future research,

particularly with reference to older adults with a medical illness, have already been discussed throughout the text within relevant sections.

Future work should focus on understanding more about the psychopathology and presentation of anxiety in older adults generally. Alongside this work, it is important to investigate further the psychopathology and presentation of anxiety in older adults with a co-existing medical illness. Part of this work is a thorough investigation of the utility of the self-report measures that have been found to be reliable and valid in a younger population. Such investigations are likely to provide insight into psychopathological, presentation and reporting differences between the age groups. Normative values for different older adult populations should be considered. Although already begun, further research needs to assess the appropriateness of current measurement techniques as well as aiding the development of more sensitive evaluative tools that better reflect the particular complexities of anxiety in older adults (and in particular, those with a medical illness). There is also a need for larger studies that can assess whether the self-report scales can discriminate between the different types of anxiety experienced by older adults (Stanley et al, 1996).

Other potentially important areas that have still to be explored include the need to assess how the age at onset of psychological distress influences the subsequent development of distress in later life (Niederehe, 1997). There is a need for prospective studies charting those who experience anxiety difficulties earlier in life and those who do not, following them into older age. Similarly, there is a need for prospective studies to look at how pre-existing anxiety disorders affect or are

affected by the development of illness's that produce anxiety like symptoms (Beck et al, 1995). Further research examining the impact of anxiety pre and post-operation and subsequent to any illness is also needed.

In conducting such research it is important that the research covers a representative sample and is generalisable. Demographic variables such as ethnicity, educational attainment, marital status, and retirement status, living circumstances remain to be examined in detail (Stanley & Beck, 2000). Although in this study it was not possible (due to sample size), possible differences between the 'young-old' and the 'old-old' should be a major consideration for any study addressing anxiety in older adults. Demographic information suggests that it is the 'oldest-old' section of the population that is growing fastest and they are also the section of the population who are most likely to experience physical and psychological health problems (Wood & Bain, 2001). However, most researchers either exclude the 'oldest-old' from their studies, or assume they present in a similar manner to the 'young-old'. It is vital that more thorough investigations of this population are carried out.

Once psychometrically sound anxiety assessment techniques that apply to all section of the older adults population (including those with a medical illness and other co-morbid presentations) are developed, reliable prevalence rates can be reported. The outcome of this work will provide a focus for the development of effective interventions for anxious older adults and, hopefully, lead to more preventative work being undertaken.

Conclusion

The assessment of anxiety in older adults is in its infancy (Kogan et al, 2000). There is a need for more information on this prevalent and complex psychological problem later in life, particularly with reference to medically compromised older adults. Many of the complexities involved in assessing anxiety in this population have been discussed in this study, with the conclusion that the anxiety self-report measures examined were not psychometrically sound. There is a need for programmatic research that explores the concept of anxiety with older adults and research that incorporates this knowledge into the development and standardisation of psychometrically sound assessment techniques (Fuentes & Cox, 1997). Only then can we ensure that anxiety assessment tools are sensitive and responsive to the particular complexities of older adults with a medical illness. As Hersen & Van Hasselt (1992) suggest, "the rather cavalier attitude that anxiety goes with the territory of ageing is untenable in our estimation" (pp 638). Psychological distress should not be viewed as part of the 'normal' ageing process. Accurate assessment of anxiety should be actively offered and available to all.

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Appendices

APPENDIX 1

thian Primary Care NHS Trust

Astley Ainslie Hospital
133 Grange Loan
Edinburgh EH9 2HL
Telephone 0131 537 9000
Direct Dial 0131 537
Fax 0131 537
www.show.scot.nhs.uk/lpct/

NHS
Lothian

Dear

Assessing anxiety and depression in older adults after coronary artery bypass surgery

Researchers from the University of Edinburgh and the Astley Ainslie Hospital are currently working on a study that is looking at current methods that are being used to measure anxiety and depression in people over the age of 60 years who also have a medical illness.

I am writing to invite you to take part in this study. An information sheet has been enclosed to provide you with more information about the study.

If you decide that you are interested in taking part or would like more information before making up your mind **please sign and return the attached form in the freepost envelope provided**. The main researcher, Carol ann Clifford, will then contact you to discuss the study and, if you wish, arrange a suitable appointment time. If you would prefer not to take part there is no need to return the attached form.

We would be extremely grateful if you do agree to take part but your participation is entirely voluntary.

Yours sincerely

I. Todd

Dr Iain Todd
Consultant in Cardiovascular Rehabilitation

TO: CAROL ANN CLIFFORD

I would like to find out more about this study and am happy for you to contact me to provide me with more information.

Signed _____

Name _____

Address _____

_____

_____

Phone number _____

TO: CAROL ANN CLIFFORD

I would like to find out more about this study and am happy for you to contact me to provide me with more information.

Signed _____

Name _____

Address _____

_____

_____

Phone number _____

APPENDIX 3

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NHS Lothian

Information Sheet

Assessing anxiety and depression in older adults after coronary artery bypass surgery

We would like to invite you to take part in a research study looking at anxiety and depression following coronary artery bypass surgery. The reason for this study is that anxiety and depression in people who are over the age of 60 years and who have medical problems is sometimes difficult to measure. This study looks at the usefulness of current ways of measuring anxiety and depression. We will be asking 40 people to participate in this study. This study has been reviewed by Lothian Research Ethics Committee.

Before you decide if you want to take part it is important that you read over this form and, if you wish, discuss it with others. Take your time to decide and please ask any questions.

If you do decide to take part in this study we would ask you to sign a consent from and to keep this information sheet for your own records. Your participation in this study is completely voluntary and you may withdraw at any time, without giving a reason, and without fear that it will affect your current or future medical care or treatment.

If you agree to take part I will come to visit you at your home or, if you prefer, arrange to meet with you at the Astley Ainslie Hospital. After a short interview to assess your mood, I will ask you to complete a number of questionnaires. The appointment will last approximately one hour. I will also send you the same questionnaires two weeks after our appointment and ask you to return them to me by post. All information collected about you during the course of the research will be kept strictly confidential. However, we will ask your permission to inform your GP about your participation in the study.

If, during the course of our interview, we think that you may need help with your mood, or if you wish information, we will give you some self-help booklets and details of useful organisations in your area. We will also offer to inform your GP.

The information we get from this study may help us to more accurately diagnose and treat future patients over the age of 60 who have a medical illness and who may also be suffering from anxiety or depression.

Thank you very much for considering taking part in this study.

If you require any further information please do not hesitate to contact me:
Carol ann Clifford
Trainee Clinical Psychologist
Department of Clinical Psychology
Astley Ainslie Hospital, Grange Loan, Edinburgh, EH9 2HL
Tel: 0131 5379128

You may also contact our independent advisor, Mick Power.
Tel: 0131 5376279

Lothian Primary Care NHS Trust

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NHS
Lothian

Dear

Re:

I am writing to inform you that the above patient has agreed to participate in a research project entitled "**Assessing anxiety and depression in older adults after coronary artery bypass surgery**". This research project is being carried out in order to fulfil the requirements for my doctorate in Clinical Psychology at Edinburgh University. I enclose a copy of the information sheet and informed consent form for this study.

This study has been approved by the Lothian Research Ethics Committee and has the support of Dr Iain Todd, Consultant in Cardiovascular Rehabilitation, based at the Astley Ainsley Hospital. If you require any further information on this study or would like to ask me any questions please do not hesitate to contact me, either at the above address or by telephone (0131 5379128).

Yours sincerely

Carol ann Clifford,
Trainee Clinical Psychologist

Enc: information sheet, informed consent form

APPENDIX

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Edinburgh EH9 2HL
Telephone 0131 537 9000
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NHS Lothian

Patient Identification Number:

CONSENT FORM

Title of Project: **Assessing anxiety and depression in older adults after coronary artery bypass surgery**

Name of Researcher: Carol ann Clifford, Trainee Clinical Psychologist
Department of Clinical Psychology, Astley Ainsley Hospital
Grange Loan, Edinburgh, EH9 2HL Tel: 0131 5379128

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. ☐
3. I understand that sections of any of my hospital records may be looked at by Carol ann Clifford. I give permission for her to have access to these records. ☐
4. I agree to take part in the above study. ☐
5. I agree that my GP can be informed about my participation in this study ☐
6. I agree that my GP and/or Consultant and/or Rehabilitation team at the Astley Ainslie can be informed of any mood difficulties I am experiencing that are highlighted during my participation in this study ☐

Name of Patient	Date	Signature
Researcher	Date	Signature

APPENDIX 6

Anxiety

Anxiety is common and treatable

Anxiety

Anxiety is common and treatable

An anxiety disorder *does not* mean that you are weak Or that you are losing your mind or that you have a personality problem. Severe anxiety is a disorder that *can be overcome* with treatment Effective treatments are available.

What is anxiety?

The word 'anxiety' is used to describe the mental and physical response to fearful and threatening situations. This reaction may include trembling, choking, increased heart rate, sweating, feelings of unreality and so on. Anxiety is a normal response experienced by everyone in response to stress. Nearly being hit by a car, sitting for an exam or giving a public talk are all examples of situations in which lead most people to experience anxiety.

You are likely to be suffering from an anxiety disorder if you have any of the following:

- The anxiety reaction occurs frequently
- Your fears are out of proportion to the situation
- You start to avoid feared situations
- It interferes with your working, social or family life

Different forms of anxiety

1 Generalized anxiety
2 Panic disorder
3 Social phobia
4 Agoraphobia

Try to work out which the following descriptions best fit your situation.

Generalized anxiety disorder

Generalized anxiety is different from the other anxiety disorders. The experience of anxiety is not linked to specific situations or to a fear of having a panic attack. It is an ongoing general anxiety, tension and excessive worrying about normal events and the future. While worry is a feature of generalized anxiety, it is less common to experience the range of other psychological symptoms common to different forms of anxiety.

Panic disorder

People who suffer from 'panic disorder' are likely to experience attacks of sudden and intense anxiety. These panic attacks cannot be associated with events occurring around a person. The person is generally free from anxiety in between attacks

Common symptoms of panic disorders include:

Psychological symptoms
- fear of dying
- fear of going crazy
- feelings of unreality

Physical symptoms
- tightness or pain in the chest
- shortness of breath
- choking sensation
- pounding heart
- trembling
- numbness/tingling sensation in fingers and feet
- light-headedness
- sweating
- hot and cold flushes
- nausea
- dizziness and light-headedness

Panic attacks are also common with the other anxiety disorders. However, those attacks are easier to predict because they mostly occur in response to the feared situation(s).

Social phobia

The main feature of 'social phobia' is the fear of being the focus of attention or subject of criticism. People with this disorder may worry that they will do something silly or embarrassing in front of others. Social phobia is experienced in many different social situations.

Commonly feared situations include:
- speaking in front of others
- asking questions
- eating in front of others
- writing in front of others
- being the centre of attention
- social activities such as lunches, dinners, parties, marriages, religious gathering or festivals etc

Agoraphobia

People who have agoraphobia experience psychological and physical anxiety and often panic attacks.

The anxiety tends to occur in situations in which:

- there is a risk of having a panic attack
- there is a sense of being trapped or being to unable to leave or escape
- it would not be easy to get help should the need arise
- the environment is different and unfamiliar

This anxiety leads to the avoidance many situations and can severely effect day-to-day life. In extreme cases people who suffer from agoraphobia find It difficult to leave their house.

Examples of commonly feared or avoided situations are:
- leaving home, travelling alone, crowds and public places

What may trigger anxiety?

There are many possible triggers for anxiety. It often starts during periods of psychological or physical stress.

Examples of psychological and physical stress include:

Psychological

- relationship break-ups
- severe arguments
- death of someone close
- loss of a job
- lack of sleep
- work pressure
- financial problems
- physical and sexual abuse

Physical

- physical illness
- excessive use of alcohol
- domestic violence
- abuse of other drugs
- trauma

When people experience stress they have a natural tendency to breathe more quickly and deeply. There is also a tendency to worry more than usual. These two factors are commonly found in people who have an anxiety disorder. Often changing the way you breathe and reducing worry can be useful for managing anxiety.

Breathing too quickly and deeply

It is surprising for people to learn that breathing too quickly and/or deeply (also known as hyperventilation) can bring on anxiety. Breathing too quickly lowers the amount of carbon dioxide in your lungs and by a complicated series of processes this causes physical symptoms of anxiety.

Other important things to note are:

- You can get physical anxiety by slightly over breathing for a long time.
  So, over breathing does not have to be obvious to you or to others.
- If you slightly over breathe, even a yawn or sigh can trigger a panic attack or physical symptoms of anxiety.

Over breathing is a habit and it takes time to change.

Worry and negative thinking

Worry and unrealistic or negative thinking can be triggers of anxiety. People who get anxious sometimes think in ways that bring on the anxiety or make it worse.

For example,

- you can think of an unpleasant situation and then make it worse by dwelling on it
- you can spend a lot of time worrying about something that never happens anyway
- you can misinterpret the behaviors and thoughts of other people around you

How to treat anxiety

The presence of anxiety does not necessarily signify a problem. It is a universal human emotion that appears as a normal response to certain situation. But anxiety is not always functional; sometimes it reaches disabling proportions. Furthermore, the anxious person may develop means of dealing with anxiety that are ineffective or counterproductive, such as *alcohol abuse.*

The end point *in the management of anxiety is not to remove all anxiety but rather to reduce it to manageable proportion.*

The best way to manage anxiety is through psychological help (counselling) and social support. With different psychological methods, it is possible to:

- control and stop panic attacks
- confront previously avoided and feared situations
- change negative and unrealistic thinking and reduce worry

Short term use of medication is recommended only when the anxiety experienced is very severe and counselling is also being used.

Another very effective way of reducing anxiety is physical exercise. Specifically, aerobic exercise is the form of exercise most consistently shown to reduce anxiety, and the duration should be of more than twenty minutes. Anxiety reduction achieved through aerobic exercise is similar to the reduction achieved through meditation or relaxation.

How to overcome anxiety

1 Identify your symptoms of anxiety

Mark on the scale how much you experience each symptom. If you have other symptoms write them on another piece of paper and also *rate* them.

Symptom	*Symptom severity* Not at all	Mild	Moderate	Severe
Psychological				
worry	_____	_____	_____	_____
fear of loss of control	_____	_____	_____	_____
fear of dying	_____	_____	_____	_____
fear of going crazy	_____	_____	_____	_____
feelings of unreality	_____	_____	_____	_____
Physical				
Trembling	_____	_____	_____	_____
tightness / pain in the chest	_____	_____	_____	_____
shortness of breath / choking	_____	_____	_____	_____
sweating	_____	_____	_____	_____
pounding heart	_____	_____	_____	_____
hot and cold flushes	_____	_____	_____	_____
dizziness / light-headedness	_____	_____	_____	_____

2 Identify situations or places that you fear or avoid

It is common for people to experience anxiety in certain situations or places but not in others. It is also common for people to avoid those situations so that they can avoid the feeling of anxiety.

Do you fear or avoid anything? If you do, write them down and discuss them with your doctor and/or counsellor.

e.g., *speaking in front of a group*

.....

.....

.....

.....

Now add to the list below any other situations or places that you fear or avoid. Mark on the scale how much you fear or avoid each of the items. It will help you to overcome your anxiety if you repeat this task every time you think of a new situation or place that you fear or avoid. Discuss these with your doctor and/or counsellor.

Places/situations	*Fear or avoidance* Not at all	Mild	Moderate	Severe
Eating or drinking with other people				
Being watched or stared at				
Talking to people in authority				
Speaking in public				
Being criticized				
Asking for directions in the street				
Ordering in a restaurant				
Asking for help in a shop				
Travelling alone or by bus				
Walking alone on busy streets				
Going Into crowded shops				
Going to the movies				
Taking elevators				

3 Getting to know your breathing habits

You have learned so far that breathing too much or too quickly can bring on anxiety symptoms. The following exercises will help you learn more about your breathing habits. First check to see if you have any of the following symptoms of over breadboards.

You breathe more than 10-12 breaths a minute at rest	Yes ☐	No ☐	Not sure ☐
Your chest sometimes feels over-expanded or tight	Yes ☐	No ☐	Not sure ☐
You or others have noticed that you sigh or yawn quite a bit	Yes ☐	No ☐	Not sure ☐
You often gasp or take deep breaths, particularly in situations that make you anxious	Yes ☐	No ☐	Not sure ☐

If you are marked "yes" to any of these, then it is likely that you over breathe.

4 Slow breathing to reduce anxiety

When you get physical symptoms of anxiety, for example breathlessness, it feels like you are not breathing enough. The natural response is to breathe in more. However, if you do try to get more air by breathing in more, it just makes the problem worse. The best solution is to slow down your breathing even though you may feel that you should speed it up. Now we suggest a slow breathing technique to stop the unpleasant feelings of anxiety.

Remember to breathe in using you, abdomen (not your chest) *and through your nose.*

- breathe in slowly to the count of 3 seconds
- when you get to 3, slowly breathe out to the count of 3 seconds
- pause for 3 seconds before breathing in again
- continue this exercise for 5 minutes or so
  - practice twice a day for 10 minutes (5 minutes is better than nothing)
  - try to check and slow down your breathing during the day
  - use the slow breathing technique whenever you get anxious

Remember the technique of slow breathing sounds very simple and it is very effective, but it will take practice to master the technique.

5 Identify unrealistic negative thinking

When people are depressed they tend to think negatively about themselves, events and their future. Unrealistic and negative thinking can also trigger anxiety and slow down recovery.

Consider these two responses.

Disagreement with a colleague...

Person A	Person B
She doesn't agree with me; she thinks what I said was stupid	So we have a different point of view. That is OK
I am a fool, I should not talk	It was interesting to discuss our different ideas
I can not handle it; I am getting out of here	If she has a problem, then too bad for her
Anxiety / panic	*Interested / stimulated*

6 Identify unrealisticly negative thinking

Here are some more examples of other unrealistic thoughts or beliefs. Mark the statements that apply to you.

- ☐ when people look at me they are examining what I do
- ☐ if I get criticized it means that I am wrong
- ☐ if I don't agree with people they won't like me
- ☐ if I make a mistake that means that I am stupid
- ☐ to be a good person I have to be nice to everyone
- ☐ I am a bad person if I hurt someone
- ☐ if I show emotion it means that I am weak
- ☐ people will think that there is something wrong with me if they see that I am anxious
- ☐ the opinions of other people about me are very important
- ☐ I am afraid that I look or sound silly to other people
- ☐ I can tell that people will evaluate me negatively
- ☐ I have to be very careful about what I say in case I offend someone
- ☐ approval is very important to me
- ☐ being anxious is a sign of weakness
- ☐ when people see me behave like this they will talk badly of me to others

Now if you have other unrealistic or negative beliefs write them below or use separate sheet of paper

e.g. *If someone is late, I assume there has been an accident.*

.....

.....

.....

7 How do you change the way you think?

It is likely that you have been thinking in an unrealistic or a negative way for some now. *Remember, you can learn to think more realistically. It will take* practice to *change your ways but you can do it.*

First, ask yourself, is this belief that I have true? In order to do this, it may help to...

- consult someone outside the situation for their opinion
- ask yourself whether everyone would have the same belief in this situation
- ask yourself if the belief is true in every situation
- examine the other similar situations
- examine other explanations for the event occurring

Second, counter each unrealistic or negative thoughts with more realistic ones

- these should be opposite to the unrealistic belief
- they should be realistic statements
- there should be as many counters as possible

8 How do you change the way that you think?

Please read the following example and then try to create your own examples. Try to find solutions to them using the same method.

SITUATION: Anxious eating in a restaurant

Unreasonable negative thoughts:

- I am sure they know that I am anxious and my fork is shaking
- They will think that I am strange
- They will think that I am a fool
- I hope they will not tell anyone
- I wish I could get out of here

Resulting Feelings: Panic

Reasonable positive thoughts:

- It is unlikely that they have noticed my anxiety
- It is more noticeable to me than to them
- If they were to think anything they would probably think that I was shy
- Even if they did think that I was anxious they would not think badly of me
- I will try to stay focused on the meal and our conversation

Resulting feelings: Manageable anxiety

9 Exposing yourself to fearful situations

Here are some general guidelines:

- Build up slowly: start with easy tasks and build up to harder tasks
- Only move on to a harder task when you feel comfortable with the task you are working on
- Practise tasks regularly, once a day is better than twice a week
- Do not give in to set-backs
- Discuss your problems with your doctor and/or your counsellor
- Get someone to help and encourage you

Specific guidelines:

- Always stay in the situation until your anxiety level drops. If you leave the situation while your anxiety is high or when you are in a panic, you will experience relief. This will make your anxiety worse the next time you are confronted with a similar situation.
- Use slow breathing strategies to control physical anxiety
- Use the new 'rational thinking' strategies to replace unrealistic/negative thinking.

Here you will find some examples to help you work out your exposure plan.

Example 1- Getting used to speaking and asking for assistance in front of others
With a friend

- go to a shop and ask for an item that you wish to buy
- go to a flower shop and ask for special arrangement of flowers
- go to a clothes shop and try on different types of clothes
- ask for directions in the street

- repeat tasks varying the Items that you ask for
- vary the shops that you go to
- repeat the activities on your own
- repeat activities with an acquaintance

Example 2- Eating in public
With a friend

- go to a coffee shop and order coffee
- have morning tea with a friend
- have *a* sandwich in a coffee shop with a friend
- have dinner in restaurant with a friend

-vary the time of day that you go
-go into quiet and then busy shops/cafes
-go to informal and formal places
-repeat activities on your own

Example 3- Feeling comfortable with groups of people

- organize and go to a social event with a group of friends
- organize and go to a social event with a group of friends and some acquaintances
- organize and go to a social event with acquaintances only
- organize and go to a social event with work colleagues

-vary the social events
-vary the time of the day
-vary the formality of the events

Example 4 – Conversation with people

- Say what you think rather than going along with what others think

Say 'No, I think…'
Say 'No, I would prefer to…'
-repeat activities with friends
-repeat activities with acquaintances
-repeat activities with people with whom you feel comfortable

Keep a record of progress

As part of treatment It is useful to keep a record of your anxiety levels in difficult situations. You can see more clearly how the breathing exercises, thinking techniques, and exposure exercises have helped you. We have developed three record forms for you to use.

1 *The symptom severity form:* We recommend you use this every week to monitor your symptoms of anxiety.

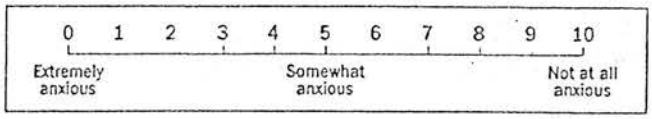
2 *The exposure form:* We recommend that you use this every week to monitor your symptoms of anxiety for situations in which you have carried out exposure exercises.

3 *Personal progress chart:* We recommend that each week you mark your overall rating on the graph provided.

Symptom severity form anssd overall rating of how you feel

Week _____

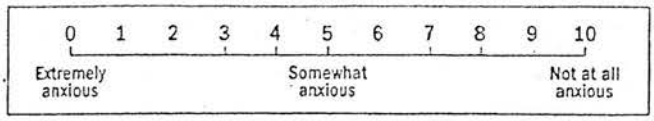
Symptom	*Severity not at all*	*mild*	*moderate*	*severe*
Psychological				
➪ fear of loss of control				
➪ fear of dying				
➪ fear of going mad				
➪ feelings of unreality				
Physical				
➪ trembling				
➪ tightness / pain in the chest				
➪ shortness of breath / choking				
➪ pounding heart				
➪ sweating				
➪ hot and cold flushes				
➪ nausea				
➪ dizziness / light-headedness				
➪ numbness / tingling				



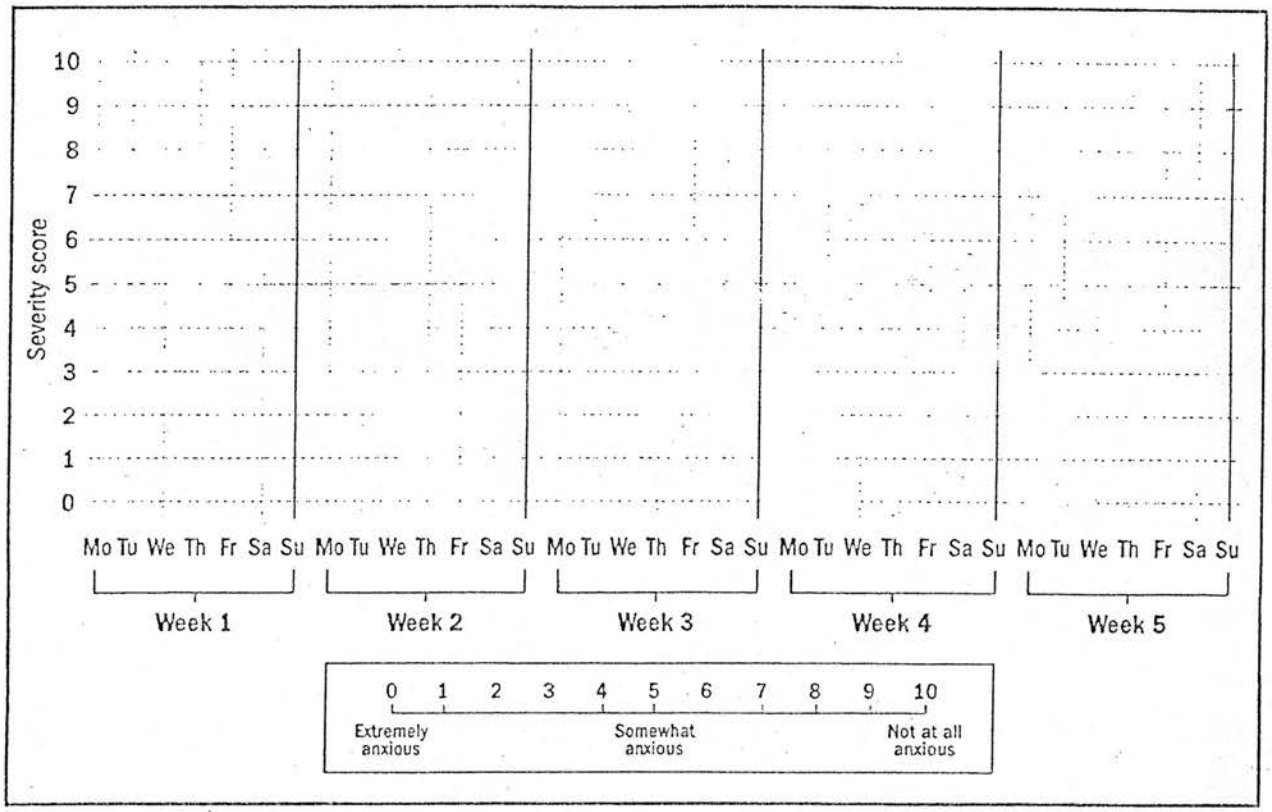
Exposure form and overall rating of how you feel

SITUATION: Example: getting used to speaking & asking for assistance

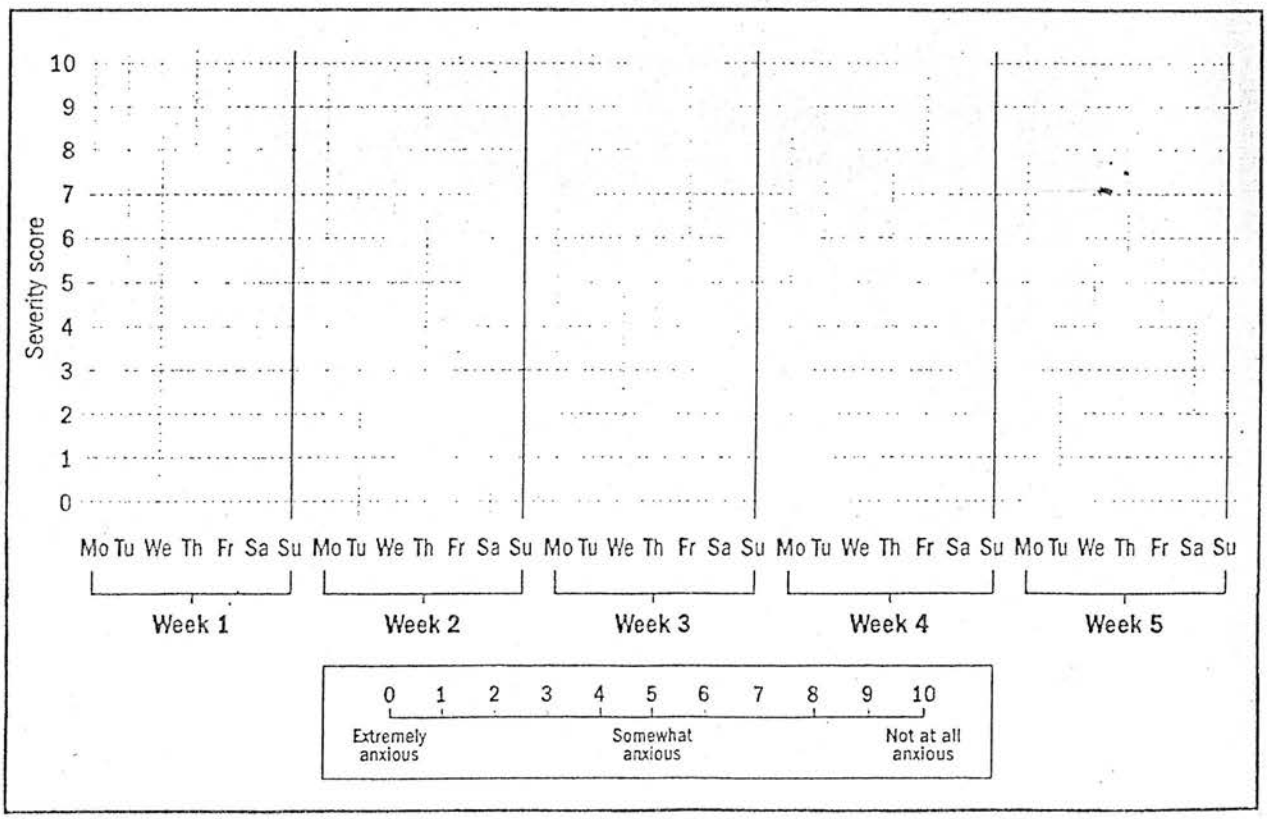
Week	*Specific task*	Fear or avoidance severity *not at all*	*mild*	*moderate*	*severe*



Personal progress chart



Personal progress chart



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Suggested reading

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Other materials

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APPENDIX 7

Depression

Depression is an illness - it is common and treatable

Depression

Depression is an illness - it is common and treatable

Depression *does not* mean that you are weak or lazy. It is a *medical* disorder like hypertension, diabetes or arthritis that requires *medical treatment.* It can occur at any age and can be overcome with *medical help.*

What is depression?

Many people use the word depression to describe feelings of sadness and loss. These feelings often pass within a few hours or a few days. During this time people are able to carry out their normal activities. The medical illness called *depression* is different from transient feelings of sadness. In *depression,* as a medical disorder, sad feelings are felt much more intensely and for a longer period of time. It can be disruptive to your work, social and family life.

Depression can also affect people in many other ways. Common symptoms are:

- Disturbed sleep
- Changes to appetite
- Physical aches and pain
- Lack of energy or motivation
- Irritability and intolerance
- Feelings of guilt
- Loss of concentration

What may trigger depression?

It is known that there are biochemical changes in the brains of depressed patients. There is also evidence that if your first degree relatives suffer from depression, you are at a greater risk of having depression. For many people, depression is triggered by stressful events, alcohol or drug use. However, in some people there is no obvious trigger. Think about your situation - was your depression associated with one of the triggers listed below?

If so, put a check beside it. If not, and you are aware of some other trigger, write it in the space provided. It would help to discuss this with your doctor, your family and friends.

Possible triggers

- Moving house _____
- Divorce of separation _____
- Death of a loved one _____
- Long term alcohol use _____
- Certain medications _____
- Dissatisfaction or conflict at work _____
- Death of a spouse _____
- Chronic physical illness _____
- Being a victim of a crime or an accident _____
- Serious injury or illness in the patient or a loved one _____
- Low self-esteem _____
- Loss of job _____
- Poverty _____
- Unemployment _____
- Chronic drug use _____
- Seasonal changes _____
- Loneliness _____
- Marital problems _____
- Childbirth _____
- Unsatisfactory relationships with family or friends _____
- Unprepared social and cultural changes (immigration) _____
- Others (specify) _____

How to overcome depression

1 Identify your symptoms of depression - in the last month

Symptom Severity Form	Not at all	Mild	Moderate	Severe
Feelings of sadness	_____	_____	_____	_____
Loss of interest or pleasure	_____	_____	_____	_____
in activities previously enjoyed	_____	_____	_____	_____
Lack of energy / tiredness	_____	_____	_____	_____
Poor/disturbed sleep	_____	_____	_____	_____
Putting on/losing weight	_____	_____	_____	_____
Poor concentration / forgetfulness	_____	_____	_____	_____
Slowness	_____	_____	_____	_____
Restlessness	_____	_____	_____	_____
Decreased interest in sex	_____	_____	_____	_____
Physical aches/pains	_____	_____	_____	_____
Believing that you are no good	_____	_____	_____	_____
Feelings of hopelessness	_____	_____	_____	_____
Thoughts of harming oneself	_____	_____	_____	_____
Feelings of guilt/self blame	_____	_____	_____	_____

2 Identify problems in your life

Everybody experiences problems in life and sometimes these can trigger depression. List the problems which you think triggered your depression. What were the things that bothered you before you became depressed?

e.g. *Going through divorce, unhappy work environment*

.....
.....
.....
.....

Discuss your list with your doctor and/or counsellor, family member or a trusted friend.

3 Working out a strategy to deal with problems

Often problems that never get resolved can trigger depression. Are you putting your problems off because you cannot find any easy solutions to them? Maybe with the help of your doctor and/or your counsellor and the support of your family and friends you can try to work out some of your problems. Think of the problems you have listed previously. We suggest that you work through each of them using the following strategy.

Discuss the problem(s) with a trusted family member or friend.
Then write down what you believe to be the major difficulties of solving it.
e.g.*Problem: Unhappy work environment*
Major difficulty of solving it: Difficulty finding a new job

.....
.....
.....
.....

Work out options for dealing with the problem(s)
Then write down your options

e.g. *Leave the job and then look for a new one*	*You shouldn't leave your job before finding a new job*
.....	.....
.....	.....
.....	.....

What do other people think?

Decide on a step by step action Wan for working through the problem(s). The final solution can seem over whelming. Plan the steps that you need to take to solve the problem and than set realistic time targets to achieve each step.

Action	*Date*
e.g. *Start looking for a new job*	*Tomorrow*

Examine the progress made in solving the problem(s). At each step, review your progress and discuss this with your doctor and/or counselor or with a trusted family member or friend.

Progress review	*Date*
e.g. *Boss responded positively*	*6/6/97*
.....	.....
.....	.....
.....	.....

4 Identify routine and pleasant activities

Think about your daily routine activities before you were depressed and write them below. Now think about those activities that you enjoyed and those that you would have liked to have done and also write them down,

Before becoming depressed

My routine activities	*Pleasant activities*	*Activities I wanted to do*
e.g. *Grocery shopping*	*Going to a restaurant*	*Reading*
.....	.....	.....
.....	.....	.....
.....	.....	.....

5 Increase routine and pleasant activities

Once you have identified your daily routine activities and pleasant activities with the help of your doctor and/ or counsellor you can slowly try to return to your routine and also try to do some of the pleasant activities you enjoy. At the beginning of each week you can choose activities from your "daily routine" list and "pleasant activity" list and build them into your day.

Remember, it is Important to do these activities even when you do not feel like it

6 Identify those areas of your life that are positive

When you are depressed it is easy to lose sight of those things that you value in your life. Think about life before depression. What did you value and what was special? Make a list of them.

e.g.	*Family*	.....	.....
	Children	.....	.....
	Work	.....	.....
	Sport	.....	.....
	Music	.....	.....

Having identified those areas of your life that are positive, discuss them with your doctor and/or counsellor.

7 Identity negative thinking

When people are depressed they tend to think negatively about themselves, events and their future. Negative thinking can also trigger depression and slow down recovery. Have you noticed differences in the way people think about events? Some people are mostly positive while others are negative. Can you relate to any of the examples below?

A colleague was promoted at work rather than you...

Person A	Person B
She is more experienced	I will never get promoted
She has been here longer	I am not appreciated
She has the necessary skills	I am not liked
It will be my turn next time	I am worthless
Brief disappointment	*Prolonged unhappiness*

Remember you can help the success of your treatment by working to change your negative way of thinking.

Here are some more examples of negative thoughts or beliefs. Mark the statements that apply to you

- ☐ If someone does not like me it means that there is something wrong with me
- ☐ If I get criticised it means that I am wrong
- ☐ If I make a mistake that means that I am stupid
- ☐ Things always and will always go wrong for me
- ☐ I cannot handle it when things go wrong
- ☐ To be a good person I have to be nice to everyone
- ☐ If I am a bad person if I hurt someone
- ☐ If I show emotion it means that I am weak
- ☐ If my partner leaves me it means that I am worthless
- ☐ If I do not get asked out it means that I am not liked
- ☐ I can never overcome my problems
- ☐ I the relationships failed, I did something wrong

8 How do you change the way that you think

It is likely that you have been thinking In a negative way for sometime now. It will take a lot of practice to change these ways

Remember you can learn to think more positively and this ***will make a huge difference in your life.***

Here are some suggestions:

First, ask yourself *"is what I believe TRUE?"*

- It will be useful to consult someone outside the situation for their opinion
- Ask yourself if everyone would have the same belief in this situation
- Examine other possible explanations for the event occurring

Second, counter each negative and unreasonable thought with more realistic ones

- This should be opposite to the unreasonable belief
- It should be a realistic statements
- There should be as many counters as possible

Now, read the following example and work out your own examples using the same format. You can do this with the help of your doctor and/or your counsellor.

Example

The example below shows how negative and positive thoughts lead to different reactions to the same situation.

SITUATION: Was not chosen for job

Unreasonable/negative thoughts:

- Just as well I didn't get the job, I would have failed at ft anyway
- I am no good/stupid
- I am a failure
- I should give up
- I will never succeed

Resulting feelings: Worthlessness, depression.

Now lets look at the same situation from a different angle

Reasonable/positive thoughts:

- Many people do not get the job they want
- I need to practice some interview techniques
- I am not a failure, I have achieved many good things in the past
- I will not get anywhere by giving up
- If I persevere I can succeed
- I have succeeded in the past and I will continue to succeed

Resulting feelings: Disappointment, but enthusiasm and hope

Now you can work through your own examples. Write down a situation that has made you unhappy and any negative thoughts you may have had and the resulting feelings. Next you may write the counter positive thoughts and the new resulting feelings.

Remember it will take time to change the way you think and feel

.....

Keep a record of your progress

As part of treatment it is often useful to record how you feel and also to plan and record activities that you do. This will help you keep track of your progress.

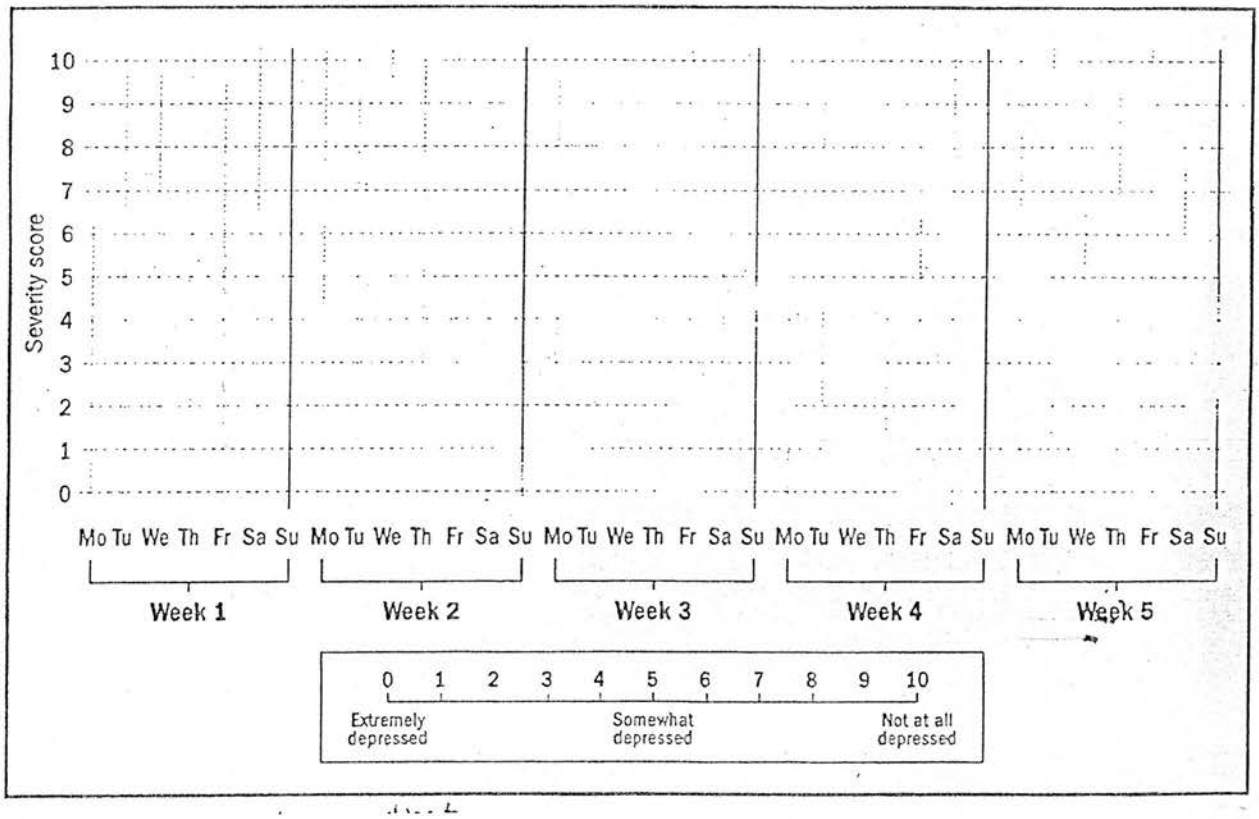
Use the Symptom Severity Form and Personal Progress Chart to monitor your mood and symptoms. Give yourself an overall rating of how you feel each wee~

Remember to:

1 Choose items from your activity lists and build them into each day using the weekly activity planning form
2 Every week think about how you feel and rate each of your symptoms on the symptom severity form
3 Each week mark your overall depression rating on the personal progress chart

Overall rating of how you feel

Personal Progress Chart



How to avoid recurrence of depression

- it is very important that you follow your physicians advice
- take your medication as directed without skipping any days
- never reduce or stop taking medication without first talking to your doctor
- identity your negative thinking habit and change them to positive one

Assess your symptoms regularly and consult your physician and/or counselor if you have any problem.

Finally

- Doing the exercises when you are depressed can be difficult
- It might be useful to work through them with a trusted friend or family member.
- If you need extra help you can always talk to your doctor and/or your counsellor.

You can overcome your depression.

This page will be filled by local centers or attending PCPs

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Doctors

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Help lines

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Suggested reading

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Other materials

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Lothian Primary Care NHS Trust

Astley Ainslie Hospital
133 Grange Loan
Edinburgh EH9 2HL
Telephone 0131 537 9000
Direct Dial 0131 537
Fax 0131 537
www.show.scot.nhs.uk/lpct/

NHS Lothian

Assessing anxiety and depression in older adults after coronary artery bypass surgery: Brief report of interview

Name: _____

Address: _____

_____

Date of birth: _____ AAH No: _____ Date of assessment _____

Self-report measure scores

Beck Anxiety Inventory (BAI): (↑ score indicate ↑ anxiety, maximum score possible 63)

Short Anxiety Screening Test (SAST): (↑ score indicate ↑ anxiety, maximum score possible 40)

Penn State Worry Questionnaire (PSWQ): (↑ score indicate ↑ anxiety, maximum score possible 80)

Geriatric Depression Scale (GDS-15): (↑ score indicate ↑ depression, maximum score possible 15)

Hospital Anxiety and Depression Scale (HADS): (↑ score indicate ↑ anxiety, maximum score possible 21)

(↑ score indicate ↑ depression, maximum score possible 21)

DSM IV criteria?

☐ Did not meet DSM-IV criteria for any mood disorder or anxiety state

☐ Met DSM- IV criteria for: _____

Clinical Impression

_____

_____

_____

_____

_____

Intervention

☐ Self-help manuals given

☐ GP informed

☐ Any other

☐ Given details of support agencies

☐ Rehabilitation Team informed

Details _____

Carol ann Clifford, Trainee Clinical Psychologist

Lothian Primary Care NHS Trust

Astley Ainslie Hospital
133 Grange Loan
Edinburgh EH9 2HL
Telephone 0131 537 9000
Direct Dial 0131 537
Fax 0131 537
www.show.scot.nhs.uk/lpct/

NHS Lothian

Date:

Dear

Assessing anxiety and depression in older adults after coronary artery bypass surgery

Thank you very much for taking part in this study. The information I collect during the study will examine the usefulness of current ways of measuring anxiety and depression in older adults who have a medical problem. Hopefully, the information will lead to more accurate methods of measurement being developed.

I have enclosed a copy of the questionnaires you completed during my visit. I would be very grateful if you could complete them for me again and post them back to me in the stamped addressed envelope provided. We are asking you to complete these to allow us to assess how your mood has changed in the past two weeks.

If you require any further information or assistance please contact me at the address above. I will write to you again in at the end of August to provide you with a summary of the results.

It was a pleasure meeting you and I wish you all the very best for the future.

With very best wishes,

Carol ann Clifford
Trainee Clinical Psychologist

Mini Mental State Examination (adapted from Folstein et al.) [1]

Patient name _____

Date of birth _____ *Date of test* _____

Section	Questions:	Max. points	Patient score
1 Orientation	a) Can you tell me today's (date)/(month)/(year)? Which (day of the week) is it today? Can you also tell me which (season) it is?	5	
	b) What city/town are we in? What is the (county)/(country)? What (building) are we in and on what (floor)?	5	
2 Registration	I should like to test your memory. (name 3 common objects: e.g. "ball, car, man") Can you repeat the words I said? *(score 1 point for each word)* (repeat up to 6 trials until all three are remembered) (record number of trials needed here:)	3	
3 Attention & Calculation	a) From 100 keep subtracting 7 and give each answer: stop after 5 answers. (93__86__79__72__65__). *Alternatively* b) Spell the word 'WORLD' backwards. (D__L__R__O__W).	5	
4 Recall	What were the three words I asked you to say earlier? *(Skip this test if all three objects were not remembered during registration test)*	3	
5 Language			
Naming	Name these objects (show a watch) (show a pencil)	2	
Repeating	Repeat the following: "no ifs, ands or buts"	1	
6 Reading	(show card or write "CLOSE YOUR EYES") - *see over* Read this sentence and do what it says.	1	
Writing	Now can you write a short sentence for me? - *see over*	1	
7 Three stage command	(Present paper) Take this paper in your left (or right) hand, fold it in half, and put it on the floor.	3	
8 Construction	Will you copy this drawing please? - *see over*	1	

Total Score 30

Examiner _____ *Notes*

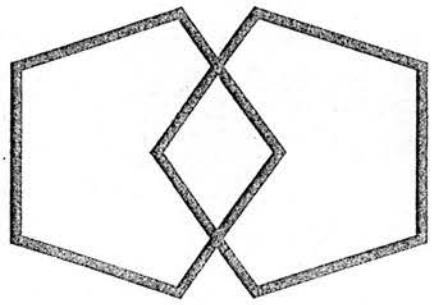
Prescribing information can be found on back of pad

Q6 - Reading

CLOSE YOUR EYES

Q6 - Writing

Q8 - Construction



Participant number:

Demographic Information

Questions answered from referral

1. Date of birth _____

2. Gender ☐ Male ☐ Female

3. Weeks since operation ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12

4. Type of operation ☐ Emergency ☐ Routine

5. How long waited _____

6. What symptoms had _____

_____

_____

7. Details of operation _____

8. Outcome ☐ Home ☐ Complications? _____

_____

☐ Astley ☐ Length of stay _____

☐ Complications? _____

_____

_____

Background details

1. Marital status ☐ Married ☐ Living as married ☐ Single

☐ Divorced ☐ Separated ☐ Widowed

2. Present occupation ☐ retired Date _____

☐ working Details _____

3. Previous occupation ☐ ☐ ☐

☐ ☐ ☐

_____

4. Education ☐ None at all ☐ Primary school ☐ Secondary school

☐ Tertiary

5. Current health

☐ No problems other than those treated by operation

☐ Problems Details _____

_____

_____

6. Previous health

☐ No problems other than those treated by operation

☐ Problems Details _____

_____

_____

Attitudes

1. How would you rate your quality of life

☐ Very poor ☐ Poor

☐ Neither poor nor good

☐ Good ☐ Very good

2. How satisfied are you with your health

☐ Very dissatisfied ☐ Dissatisfied

☐ Neither satisfied or dissatisfied

☐ Satisfied ☐ Very satisfied

Any other important issues raised

_____

_____

_____

_____

Notes from assessment

_____

_____

_____

_____

_____

APPENDIX I

AI

ow is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY, by placing an X in corresponding space in the column next to each symptom.

	Not at all	Mildly (it did not bother me much)	Moderately (it was very unpleasant but I could stand it)	Severely (I could barely stand it)
1. Numbness or tingling.				
2. Feeling hot.				
3. Wobbliness in legs.				
4. Unable to relax.				
5. Fear of the worst happening.				
6. Dizzy or lightheaded.				
7. Heart pounding or racing.				
8. Unsteady.				
9. Terrified.				
10.Nervous.				
11.Feelings of choking.				

	Not at all	Mildly (it did not bother me much)	Moderately (it was very unpleasant but I could stand it)	Severely (I could barely stand it)
12.Hands trembling.				
13.Shaky.				
14.Fear of losing control.				
15.Difficulty breathing.				
16.Fear of dying.				
17.Scared.				
18.Indigestion or discomfort in abdomen.				
19.Faint.				
20.Face flushed.				
21.Sweating (not due to heat).				

PENNSYLVANIA STATE WORRY INVENTORY

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number below the statement to describe how you generally feel. There are no right or wrong answers. Do not spend too much time on any statement but give the answer which seems to describe how you generally feel.

1 If I don't have enough time to do everything, I don't worry about it

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

2 My worries overwhelm me

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

3 I don't tend to worry about things

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

4 Many situations make me worry

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

5 I know I shouldn't worry about things but I just can't help it

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

6 When I am under pressure I worry a lot

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

7 I am always worrying about something

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

8 I find it easy to dismiss worrisome thoughts

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

9 As soon as I finish one task, I start to worry about everything else I have to do

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

10 I never worry about anything

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

11 When there is nothing more I can do about a concern, I don't worry about it anymore

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

12 I've been a worrier all my life

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

13 I notice that I have been worrying about things

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

14 Once I start worrying, I can't stop

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

15 I worry all the time

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all typical of me — Very typical of me

16 I worry about projects until they are all done

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5
Not at all Typical of me — Very typical of me

HAD Scale

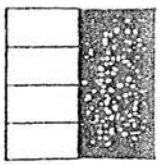
Name:

Date:

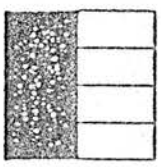
Doctors are aware that emotions play an important part in most illnesses. If your doctor knows about these feelings he will be able to help you more.
This questionnaire is designed to help your doctor to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.
Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought-out response.

Tick only one box in each section

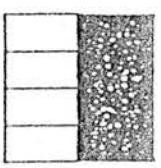
I feel tense or 'wound up':
- Most of the time
- A lot of the time
- Time to time, Occasionally
- Not at all



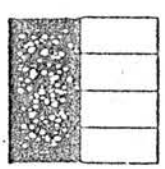
I still enjoy the things I used to enjoy:
- Definitely as much
- Not quite so much
- Only a little
- Hardly at all



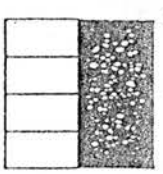
I get a sort of frightened feeling as if something awful is about to happen:
- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn't worry me
- Not at all



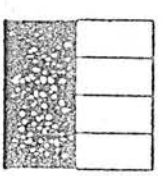
I can laugh and see the funny side of things:
- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all



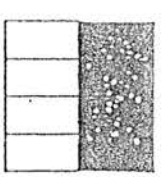
Worrying thoughts go through my mind:
- A great deal of the time
- A lot of the time
- From time to time but not too often
- Only occasionally



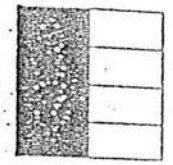
I feel cheerful:
- Not at all
- Not often
- Sometimes
- Most of the time



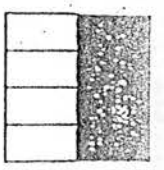
I can sit at ease and feel relaxed:
- Definitely
- Usually
- Not often
- Not at all



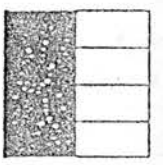
I feel as if I am slowed down:
- Nearly all the time
- Very often
- Sometimes
- Not at all



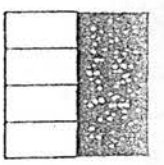
I get a sort of frightened feeling like 'butterflies' in the stomach:
- Not at all
- Occasionally
- Quite often
- Very often



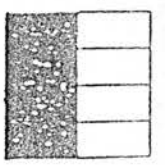
I have lost interest in my appearance:
- Definitely
- I don't take so much care as I should
- I may not take quite as much care
- I take just as much care as ever



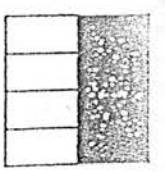
I feel restless as if I have to be on the move:
- Very much indeed
- Quite a lot
- Not very much
- Not at all



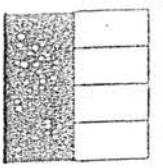
I look forward with enjoyment to things:
- As much as ever I did
- Rather less than I used to
- Definitely less than I used to
- Hardly at all



I get sudden feelings of panic:
- Very often indeed
- Quite often
- Not very often
- Not at all



I can enjoy a good book or radio or TV programme:
- Often
- Sometimes
- Not often
- Very seldom



Do not write below this line

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Short Anxiety Screening Test

1 **Do you feel keyed up, on edge?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

2 **Do you feel that something terrible is going to happen?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

3 **Are you worrying about your present state?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

4 **Do you feel you have control of your life?**

1----------2----------3----------4

Always Often Sometimes Rarely or never

5 **Can you relax?**

1----------2----------3----------4

Always Often Sometimes Rarely or never

6 **Do you suffer from back pain, neck pain and headache?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

7 **Do you sweat a lot or suffer from palpitations?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

8 **Have you been irritable?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

9 **Do you sleep well?**

1----------2----------3----------4

Always Often Sometimes Rarely or never

10 **Do you suffer from dizziness or faintness?**

1----------2----------3----------4

Rarely or never Sometimes Often Always

G. D. S. S.
(Short Form)

ame: ..... Date: .....

ease answer all the following questions by ringing either 'Yes' or 'No'.

Are you basically satisfied with your life?	Yes/No
Have you dropped many of your activities and interests?	Yes/No
Do you feel that your life is empty?	Yes/No
Do you often get bored?	Yes/No
Are you in good spirits most of the time?	Yes/No
Are you afraid that something bad is going to happen to you?	Yes/No
Do you feel happy most of the time?	Yes/No
Do you often feel helpless?	Yes/No
Do you prefer to stay at home, rather than going out and doing new things?	Yes/No
Do you feel you have more problems with memory than most?	Yes/No
Do you think it is wonderful to be alive now?	Yes/No
Do you feel pretty worthless the way you are now?	Yes/No
Do you feel full of energy?	Yes/No
Do you feel that your situation is hopeless?	Yes/No
Do you think that most people are better off than you?	Yes/No

Table 10: Test-retest reliability correlations for the group of participants diagnosed as anxious (n=7)

	Mean score Time 1	Mean Score Time 2	*r*	Significance level
BAI	13.00	7.94	.355	NS
PSWQ	40.14	33.32	-.121	NS
HAD (total)	7.30	9.77	-.188	NS
HAD (anxiety)	6.86	5.23	-.470	NS
HAD (depression)	7.94	4.54	-.075	NS
SAST	20.43	17.76	-.160	NS
GDS	6.86	3.02	.340	NS

Table 11: Test-retest reliability correlations for the group of participants diagnosed as non-anxious (n=10)

	Mean score Time 1	Mean score Time 2	*r*	Significance level
BAI	8.10	4.94	.051	NS
PSWQ	37.30	35.29	.120	NS
HAD (total)	8.40	6.75	.455	NS
HAD (anxiety)	4.10	3.59	.770	**.005**
HAD (depression)	4.30	3.16	.200	NS
SAST	15.60	15.39	.361	NS
GDS	3.20	2.42	.026	NS